

UNIVERSITY GRANTS COMMISSION

REPORT FOR THE YEAR
1987-88



Presented to Government of India in compliance with
Section 18 of the UGC Act, 1956
New Delhi.

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(1987-88)

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* w.e.f. 3rd April, 1987 in place of Shri Anand Sarup.
** upto 9th May, 1987.

UNIVERSITY GRANTS COMMISSION

ANNUAL REPORT

April 1987-March 1988

In compliance with Section 18 of the UGC Act, 1956 (NO.3 of 1956)* we have the honour to present to the Central Government the Annual Report of the University Grants Commission for the year 1987-88 to be laid before both the Houses of Parliament.

SECTION 1 - PART I

QUANTITATIVE GROWTH OF INSTITUTIONS, ENROLMENT AND STAFF STRENGTH

1.01 In recent years, efforts have been made by the Commission to regulate the growth of higher education as well as the establishment of new universities and colleges with a view to ensuring that higher education grows to meet the genuine needs of the society for trained manpower with appropriate levels of professional training, skills and specialisations or general educational attainments. As envisioned in the National Policy on Education (1986), institutions of higher education are expected to possess a modicum of facilities by way of basic infrastructure such as class rooms, libraries, laboratories, hostels, staff quarters, teachers' hostels and other inputs like technical and research support and resources for purchase of equipment, books and journals etc. and the Commission's endeavour in this regard is in harmony with the New Education Policy(NPE).

* The University Grants Commission Act 1956 (Act No.3 of 1956) as amended upto 1st October, 1984.

In the context of the growth of higher education in India during the last three decades or so, three important facts need to be emphasised. First, enrolment at the level of higher education as a proportion of the relevant age-cohort is hardly adequate inspite of the unprecedented growth that has taken place. Second, in spite of the fact that there is a need to regulate expansion in view of the limitations of resources, it is not easy to deny expansion altogether. The weaker sections of the society have looked upon higher education as the only means for vertical, social and economic mobility and, to deny them access to higher education would be against all canons of social justice and equity. Third, it would not be proper to determine the demand for education from the point of view of the labour market alone without due consideration to the social, cultural and humanistic aspects of education.

The development of higher education in India thus faces the challenge of quantity versus quality and a strategy has to be evolved to arrive at an acceptable balance between the two demands. An adequate realization of this objective requires concerted efforts, careful educational planning and coordination of resources and constant vigil as well. This calls for identification of priorities and regional needs and, above all, determination of relevance and excellence in higher education. This section of the report presents in numerical terms the higher education scenario of the country over the past decade as reflected by the growth in enrolment, staff and the number of institutions.

1.02 New Universities

The following six universities came into being during the year 1987-88, raising the total number of universities in the country to 142 as on 31st March, 1988.

S.NO.	Name of the State/ Union Territory	Name of the University
1.	Karnataka	Kuvempu University, Shimoga
2.	Rajasthan	i) Kota Open University, Kota ii) University of Ajmer, Ajmer iii) Rajasthan Agriculture University, Bikaner.
3.	Tripura	Tripura University, Agartala
4.	Uttar Pradesh	Purwanchal University, Jaunpur.

The following universities were declared fit to receive Central assistance including assistance for institutional development in terms of the rules framed under section 12(B) of the UGC Act.

<u>S.No.</u>	<u>Name of the State</u>	<u>Name of the University</u>
1.	Goa	Goa University, Goa
2.	Rajasthan	Rajasthan Agriculture University, Bikaner

In addition, the following universities were declared fit to receive central assistance for all approved schemes except for institutional development in terms of the rules framed under Section 12(B) of the UGC Act.

1. Shri Jagannath Sanskrit Vishwavidyalaya, Puri (Orissa)
2. Mother Teresa Women's University, Kodaikanal (Tamilnadu)
3. Mahatma Gandhi University, Kottayam (Kerala)

The question of declaring these universities as institutions fit for assistance for institutional development will be considered after the Acts of these universities have been amended as per the suggestions of the UGC and all the other requirements stipulated in the rules framed under Section 12 B of the UGC Act are fulfilled by the State Governments/Universities concerned.

1.03 New Institutions Deemed to be Universities under Section 3 of the UGC Act.

The Government of India, on the recommendations of the UGC, declared the following institutions as institutions deemed to be universities under Section 3 of the UGC Act.

1. Tilak Maharashtra Vidyapith, Pune.
2. Rashtriya Sanskrit Vidyapeeth, Tirupati.
3. Sri Lal Bahadur Shastri Rashtriya Vidyapith, New Delhi.

With these the number of institutions deemed to be universities rose to 22 as on 31st March, 1988.

During the period under report, the Commission also recommended to the Government of India, Ministry of Human

Resource Development, the conferment of 'deemed to be university' status on the following institutions on the basis of the recommendations of the committees which visited these institutions:-

1. Jamia Hamdard, New Delhi, comprising interalia the following institutes:
 - a) Institute of History of Medicine and Medical Research.
 - b) Indian Institute of Islamic Studies.
 - c) Allied Institutes existing on the campus viz., the College of Pharmacy, the Tibbi College, the Majeedia Hospital and the School of Nursing.
2. National Centre of History of Art and Museology of the National Museum, New Delhi.
3. Central Institute of Fisheries Education, Bombay.

It was mentioned in the UGC Annual Report for 1986-87 that the Commission had recommended to the Government of India, Ministry of Human Resource Development, the conferment of 'deemed to be university' status on the National Institute of Mental Health and Neuro-Sciences, Bangalore. The institute subsequently informed the Commission that its governing body had since decided to upgrade the institute as an 'institution of national importance' in view of its unique nature. Consequently, the proposal for granting 'deemed to be university' status on this institute has been shelved for the present.

1.04 Institutes established under Acts of State Legislatures:

An institution named as Sanjay Gandhi Post-graduate Institute of Medical Sciences, Lucknow, which was set up as

a statutory university by an Act of the State Government of U.P. in 1983, has since been included in the list of universities maintained in the UGC under a new category called 'Institutes established under Acts of State Legislatures'.

A chronological list of universities and institutions deemed to be universities during 1987-88 is given in Appendix-I.

1.05 Colleges under Section 2(f):

At the end of 1987-88, 3903 Colleges including postgraduate colleges had been included in the list maintained under Section 2 (f) of the UGC Act.

1.06 Student Enrolment:

In terms of absolute numbers, there has been a consistent increase in enrolment as well as institutions over the years as reflected in table 1.1 below. It will be seen that in 1978-79, the number of students enrolled was 26.18 lakhs spread over 108 universities, 10 institutions deemed to be Universities and 4460 Colleges whereas in 1987-88 there were as many as 38.14 lakh students enrolled in 142 Universities, 22 institutions deemed to be Universities, and 6597 Colleges.

TABLE 1.1

Year	Number of universities	Number of Colleges	Number of Students
1978-79	108+10 institutions deemed to be universities	4,460	26,18,228
1979-80	108+11 institutions deemed to be universities	4,558	26,48,579

Year	Number of universities	Number of Colleges	Number of Students
1980-81	112+11 institutions deemed to be universities	4,722	27,52,437
1981-82	118+13 institutions deemed to be universities	4,886	29,52,066
1982-83	120+13 institutions deemed to be universities	5,039	31,33,093
1983-84	124+15 institutions deemed to be universities	5,246	33,22,939
1984-85	125+15 institutions deemed to be universities	5,590	34,04,096
1985-86	132+17 institutions deemed to be universities	5,816	35,70,897*
1986-87	136+19 institutions deemed to be universities	6,512	36,81,870*
1987-88	142+22 institutions deemed to be universities	6,597 **	38,14,417*

 Note: 1. The number of colleges given above excludes junior colleges and those offering diploma/certificate courses.

* Estimated

** Provisional

1.07 Growth Rate of Enrolment:

The growth of student enrolment in the University System over a 20-year period from 1968-69 to 1987-88 is given in Appendix-II. The average decadal growth rate of enrolment during 1978-79 to 1987-88 was 4.0 percent as compared to the average decadal growth rate of 6.6 percent recorded in the earlier period viz. 1968-69 to 1977-78. A look at the year-wise growth rates of enrolment during the ten-year period 1978-79 to 1987-88 also brings out the fact that there was no definite trend in the growth rate as it rose in one year and fell in another. While the lowest growth rate recorded during this period was 1.2 per cent in 1979-80, the highest was 7.3 per cent in 1981-82. In 1987-88, the growth rate was 3.6 per cent.

The all-India average annual compound rate of growth of enrolment during the five year period 1983-84 to 1987-88 was 3.6 per cent as indicated in Appendix-III. It will also be seen from the appendix that there were wide deviations from this average growth rate among different States. Himachal Pradesh, for instance, recorded an average annual compound rate of growth of enrolment of 7.1 per cent during the period while Bihar recorded a mere 2.5 per cent growth rate. As many as 10 States had average growth rates lower than the all-India average of 3.6 per cent.

1.08 Stage-wise Enrolment:

Stage-wise enrolment at the graduate, post-graduate, research and diploma/certificate levels during 1983-84 to 1987-88 given in Appendix-IV shows that percentage enrolment at these different levels in 1987-88 was almost the same as it was in 1986-87.

Over the five-year period also, percentage of enrolment at the graduate, postgraduate/research and diploma/certificates levels has remained the same in each year viz. 88 per cent, 10.6 per cent and 1.4 per cent respectively in each of the five years from 1983-84 to 1987-88.

Appendix-V gives stage-wise enrolment separately in the university departments/university colleges and affiliated colleges during the four year period 1984-85 to 1987-88. It will be seen that enrolment in the affiliated colleges as percentage of total enrolment for all the stages taken together remained in the vicinity of 83 per cent in each of these years. Stage-wise enrolment in the affiliated colleges accounted for 87.7 per cent of the total enrolment at the graduate level, 56.5 per cent at the post-graduate level, 14.9 per cent at the research level and 43.2 per cent at the diploma/certificate level during 1987-88. The remaining enrolment at these different levels was accounted for by the University departments/ University Colleges. The position in the earlier years was almost similar.

1.09 Faculty-wise Enrolment:

Faculty-wise distribution of student enrolment for the five-year period 1983-84 to 1987-88 given in Appendix-VI shows enrolment in each faculty as a percentage of total enrolment in all the faculties taken together. It will be seen that enrolment in the faculty of Arts (including Oriental Learning) has been the highest as percentage of total enrolment in each year, followed by the faculty of Commerce, Science and Law in that order. Year to year variations in the percentage of enrolment in each faculty to total enrolment in all the faculties taken

together have been of a very marginal nature. For example, enrolment in the faculty of Arts has been 40.3 per cent from 1984-85 to 1987-88 and 40.4 per cent in 1983-84. Similarly, in the faculty of Commerce, the enrolment percentage has remained between 21.3 and 21.7 over the five year period. Percentage share of the faculty of Science remained 19.7 during 1983-84 to 1987-88. Enrolment trends in other faculties present a similar picture except that percentage shares of these faculties in total enrolment have been far too small as compared to the faculties of Arts, Commerce and Science.

1.10 Establishment of New Colleges:

The number of new colleges set up during 1987-88 was 85, thus raising the total number of affiliated colleges to 6597 in 1987-88 as compared to 6512 colleges in 1986-87 (Appendix-VII). Of the 85 newly established colleges, 74 were arts/science/commerce colleges while the remaining were professional colleges belonging to different faculties as follows:

Medicine/Pharmacy/ Ayurveda/Nursing/ Dentistry/ Homoeopathic (19), Engineering/ Technology (4), Law (2) and Agriculture (1). The number of colleges declined in the faculties of Physical Education/Education and oriental

Learning. The decline in the number was 9 and 6 respectively.

1.11 State-wise Growth of Colleges:

State-wise distribution of the newly established colleges during the period 1983-84 to 1987-88 is given in Appendix-VIII. The number of colleges in the

country increased by 1351 during this period. The highest increase during this period was recorded in the State of U.P.(402). Other states where the increase was substantial were Maharashtra (172), Bihar (159), Karnataka (146), Madhya Pradesh (114), Andhra Pradesh (74) and Orissa (73).

These Seven States among them accounted for over 84 per cent of the increase in the total number of colleges during the period. Increase in the number of colleges in some of the other states was negligible while in some it was not significant. Noticeably, there was no increase in the number of colleges in Jammu & Kashmir over this period. It will also be seen (Appendix IX) that out of a total increase of 1351 in the number of colleges during 1983-84 to 1987-88, increase in the number of arts/science/commerce colleges was 658.

1.12 Staff Strength:

Appendix-X shows the strength and distribution of teaching staff in the university departments/university colleges during the period 1983-84 to 1987-88. In 1987-88, there were 53,165 teachers in the university departments/university colleges. Out of these, 6273 were professors, 13079 readers, 31580 lecturers and 2233 tutors and demonstrators. The proportion of senior teachers viz. Professors and Readers to the total teaching staff has gone up from 34.5 per cent in 1983-84 to 36.4 per cent in 1987-88. The teaching staff in the university departments/university colleges increased by 2015 in the year 1987-88 as compared to an increase of 2062 in 1986-87 over the preceding year. Teaching staff in the affiliated colleges (Appendix-XI) totalled 1,88,808 in 1987-88 which included 24,923 senior teachers, 1,55,389 lecturers and 8,496 tutors and demonstrators. There was an increase of 5,570

in the total staff strength in the affiliated colleges in 1987-88 over the year 1986-87 as compared to an increase of 5,337 in 1986-87 over 1985-86.

1.13 Doctorate Degrees Awarded:

The faculty-wise position of doctorate degrees awarded during 1982-83 to 1986-87 is given in Appendix-XII. During the year 1986-87, 7,603 doctorate degrees were awarded. As in 1985-86, the faculty of Arts recorded the highest number of doctorate degree awarded (2987), followed by the faculty of Science (2937). Among professional faculties, the number was the highest in the faculty of agriculture (649) followed by the faculty of Commerce (272), Education (227), Engineering/ Technology (201), Veterinary Science (160), medicine (63) and Law (35). The number was 72 in the faculty of 'Others'.

SECTION 1 - PART II

NEW EDUCATION POLICY

1.14 New Education Policy:

The Commission continued to give high priority to the implementation of the NPE (1986) as elaborated in the Programme of Action (POA) approved by the Parliament.

Some of the major thrust areas of the NPE which were pursued with vigour during the year were:

- a) Autonomous Colleges
- b) Redesigning of courses
- c) State Councils of Higher Education
- d) Accreditation and Assessment Councils
- e) Alternative Models of Management in Universities.
- f) National Qualifying Test for recruitment of teachers
- g) Making research and development broad-based
- h) Training/Orientation of teachers
- i) Improvement of Efficiency
- j) Youth and Sports
- k) Education for the Minorities, Scheduled Castes/ Scheduled Tribes, Handicapped and Women.

The Commission made concerted efforts in promoting awareness and acceptance of the ideals of the NPE through discussions at appropriate levels with State/Central governments, university authorities, teaching community etc. besides constituting expert groups to formulate action plans, guidelines, financial pattern etc. Simultaneously, organization of seminars, workshops, meetings with academics and follow up action with universities were the strategies adopted by the Commission

during the year to accelerate the process of appreciation of the NPE - POA by the university community.

Guidelines on the following themes were formulated during the year and widely circulated:

- i) Autonomous colleges;
- ii) Orientation of teachers;
- iii) State Council of Higher Education;
- iv) Adult Education and Extension;
- v) Women's Studies;
- vi) Physical Education and Sports;
- vii) Consolidation of development programmes in universities;
- viii) Consolidation of development programmes in colleges;
- ix) Terms and conditions of affiliation of colleges.

National Institute of Educational Planning & Administration (NIEPA) and the Association of Indian Universities organised workshops/seminars on behalf of the UGC for the academic community, state government representatives etc. for better understanding and appreciation of the NPE with a view to expedite the implementation of the policy.

1.15 While details of the various schemes emerging out of the NPE-POA have been given in the relevant chapters, a brief outline of the progress of implementation of New Education Policy is given in the following paragraphs:

- i) Proposals of all eligible universities have been finalised as per new guidelines for the universities during the 7th Plan period.

- ii) New guidelines for colleges as per NPE-POA have been formulated and widely circulated. Development grants to a number of colleges have been approved as per these guidelines.
- iii) Guidelines for granting affiliation to new colleges were approved by the Commission and circulated to the Universities/State Governments.
- iv) A Committee is working on the management pattern of various university bodies in the light of the new demands on the university system.
- v) Computer facilities have been sanctioned to universities and in addition, colleges have also been provided with PC/XT computers and other systems. It has now been decided to increase the number of colleges from 200 to 400 for providing computer facilities during the 7th Plan period.
- vi) Regulations for minimum standards of instructions for the grant of first degree were framed and circulated to the universities.
- vii) Proposals of several new colleges have been approved for grant of autonomous status.
- viii) The Commission has constituted a Committee of experts to frame guidelines with a view to develop the departments/centres as autonomous within the university frame work.
- ix) Curriculum Development Centres were established with a view to meeting the growing demands of specialisation and provide flexibility in the combination of courses.

- x) A scheme for improvement of salary and service conditions of university and college teachers was announced in June, 1987 as one of the measures for improvement in the quality and standards of teaching and research in the universities and colleges.
- xi) The Commission has approved a scheme for establishment of Academic Staff Colleges (ASC) for the orientation of newly appointed college and university lecturers. 48 universities have been identified to set up ASCs. Of these, 34 ASCs have already started organising orientation courses during 1987-88.
- xii) The Commission constituted a Task Force to evolve performance evaluation and code of professional ethics for teachers in consultation with AIFUCTO representatives.
- xiii) Modern Computer-based Information Centres have been set up at the Indian Institute of Science, Bangalore (Science), S.N.D.T. Women's University, Bombay (Humanities) and M.S. University, Baroda (Social Sciences).
- xiv) A Nuclear Science Centre has been established at the Jawaharlal Nehru University, New Delhi as an Inter-University Centre. Another Inter-University Centre in Astrophysics and Astronomy has been established in Poona.

- xv) The revised guidelines on State Councils of Higher Education have been formulated and circulated to the State governments and universities. A State Council for Higher Education has since been set up in Andhra Pradesh.
- xvi) A concept paper on Accreditation and Assessment Council has since been issued for wider debate through regional seminars.
- xvii) The Commission has taken steps for supply of colour T.V. sets to about 2000 selected colleges in phases during the 7th Plan period.
- xviii) 15 subjects have been selected for which syllabus-oriented video course material is to be produced with the help of best available teachers.

SECTION 2

INTER - UNIVERSITY CENTRES

- 2.01 The University Grants Commission has recently brought in a new innovation in the education scene of India. It has been decided to set up a number of Inter-University Centres in different areas. In the beginning, the Commission is concentrating on establishing these centres next to major experimental facilities. The idea is to have an autonomous institution in a university environment where scientists and graduate students from universities will be able to spend extended periods of their time inter-acting with each other, the core staff of the Centre, other visitors and using the special facilities available there. This is an organisational technology to increase inter-action within the university community as also to be able to provide them facilities which University Grants Commission cannot afford for various universities individually.

The Commission is now empowered to establish autonomous institutions for providing common facilities to the universities in terms of Section 12 (ccc) of the UGC Act. The National Policy on Education 1986 and Programme of Action state that "National Research Facilities should be set up within the university system."

2.02 NUCLEAR SCIENCE CENTRE

An Inter-University Centre for research in Nuclear Sciences using an accelerator was started in Jawaharlal Nehru University with the understanding that the Centre will become autonomous by registering under the Society Registration Act. The Centre started functioning in JNU since 18th December, 1984 and the formal registration has been obtained on September 30, 1988.

The Nuclear Science Centre is to provide a system, facilitating accelerator oriented research in various fields. There are possibilities of research in the areas such as Atomic Physics, Condensed Matter Physics, Nuclear Chemistry, Bio-Sciences and various other allied areas besides the fundamental Nuclear Physics. It will be connected with the universities and other teaching institutions to provide a balanced man-power growth both scientific and technical.

The main facility in this Centre in its first phase will be a 145 million volt tandem accelerator, being fabricated by the National Electrostatic Corporation of Maidon, Wisconsin, USA. Equipped with a 380 KV injector with three changeable ion sources and nano - second light and heavy ion pulsing system, 15 UD Pelletron provides a versatile ion accelerator capable of accelerating almost any ion across the periodic table from proton to uranium to energies upto 200 mev.

The construction work started on December 11, 1986. The pelletron accelerator tank 5.49 m diameter and 26.54 m high, in which the accelerator will be installed and run after filling it with SF6 gas was made on the site. It is complete, installed and aligned at its permanent location which is at 12 m from the ground level. The accelerator fabrication at National Electrostatic Corporation is nearing completion. The personnel have participated in testing of components etc. before shipment. The last consignment is expected to arrive early 1989. The buildings are also nearing completion. It is expected that the installation of the Pelletron will start around March 1989 and the ion beams will be available for experiments in the middle of 1990.

Construction of the Pelletron accelerator tank was a special fabrication job requiring innovation in techniques used in various phases. An iron structure 43 m high was erected entirely for the purpose of the construction of the tank. Eight hydraulic jacks, each of 18 ton capacity were mounted on the top platform of the structure. The tank is made of nine shells made on the site and two dished ends. A trolley system was made at the base of the structure to roll in and align the parts of the tank before welding. First the top dished end was placed on the trolley and square bars hanging from the hydraulic jacks were welded to it. The jack system lifted the dished end to some height, a shell was inserted in the space using trolley, aligned with the dished end, welded and radiographed. This way one by one shells were welded and tank lifted up. After completion the tank was stress relieved by heating the entire tank to 550°C in a controlled way by using LPG system specially for this operation and utilizing 72 thermocouples for monitoring the temperature uniformity. The tank was then hydrotested and lifted to a temporary location at a height of 14 m from the ground. First 12m part of the accelerator tower was then constructed with a special base for the tank on the top. After the concrete was set, the tank was installed and aligned. After this operation the 43 m tall iron structure was dismantled.

Tower around the accelerator tank with thick concrete to provide radiation shielding was constructed by using slip forming technique. In this, entire shuttering structure is mounted on hydraulic jacks which moves with a slow speed of 4" per hour while concrete is poured using pump with a synchronized timing. With this technique entire tower from the base of the tank up, a total height of 30m was finished in 5 weeks with an initial period of 6 weeks for

setting up the system. It is for the first time in our country that a building structure has been constructed by this technique.'

Air conditioning, sub-station and electric wiring, workshop facility, cooling water facility and other infra-structure is nearing completion.

Pelletron accelerator beam hall where experiments are being planned is ready. It has the provision for seven beam lines. It will be possible to switch the ion beams from one to another using a switching magnet which is ready.

Four zonal workshops were organised in Bangalore, Pune, Varanasi and Udaipur to discuss the experimental facilities on the beam lines for effective utilisation of the beams. Final workshop was organised in Delhi in October, 1987 where the experimental facilities were finalised. Two major experimental facilities : Large solid Angle Gamma Detector System for In-beam Gamma Spectroscopy and a Recoil Mass Spectrometer have been sanctioned by University Grants Commission. Modus operandi for implementing these projects by involving universities is being worked out.

2.03 CENTRE IN ASTRONOMY

The University Grants Commission agreed to the proposal made by Osmania University for setting up of a National Centre for Astronomy at Rangapur near Hyderabad.

The primary objective of the centre is to provide within the university system high class facility for observational astronomy, primarily in optical and infrared wavelength regions, which cannot be obtained or managed within the resources and framework of individual universities. This facility will be made available to astronomers from various

universities and institutes. It is expected to attract young talented persons to the field of observational astronomy and provide them training for making them competent astronomers. In achieving this goal, the Centre will continuously interact with other astronomers of the country and upgrade the existing facilities.

The UGC had taken steps to modernize the Nizamiah Observatory located at the campus of the Osmania University out of the funds received under India US Wheat Loan Educational Programme for purchase of 48" telescope with a Baker Corrector System and a number of auxillary equipment. Another Observatory known as Japal - Rangapur Observatory was also established by the University at Rangapur which has a workshop, building, observers lodge and staff quarters. This observatory has sophisticated equipment i.e. Dual Channel Photometer, a Meinel spectroscopy etc. Apart from the UGC support for development of Observatory the university received substantial assistance through research grant from US-Air Force and National Science Foundation of USA.

The aforesaid facilities available both at Nizamiah and Japal - Rangapur Observatories are useful for photometry and spectroscopy of eclipsing binaries and other variable stars and are eventually to be transferred to the National Centre. It is envisaged that the Centre would interalia undertake design and development of optical and auxillary instrument for research work in astronomy and astrophysics.

The project document for the Centre is under consideration of the Commission.

2.04 Science Information Centre, Indian Institute of Science,
Bangalore

The University Grants Commission accepted the proposal made by I.I.Sc., Bangalore for the establishment of National Science Information Centre in 1983. The Centre is functioning under the guidance of a Programme Committee.

The Centre would create current awareness in the Scientists working in Universities/colleges by providing an authentic and up-to-date abstracting service in the areas of physics, Biological Sciences, Chemistry, Mathematics and Earth Sciences.

The Centre is providing to the users, on request, full length photo-copies of current papers and educates them in generating queries for their needs for an optimal utilisation of the information services.

The Centre has obtained two computer systems DEC - 1090. The main frame system is WIPRO micro computer. DEC System is being used on time sharing basis whereas WIPRO system is located at NCSI and dedicated to the Centre's activities. Construction of the building is being taken up and up-to-dating of the existing system is contemplated.

A total number of 2478 profiles and abstracts has been generated by the Centre.

A computerised management system has been implemented to streamline the journal procurement, followup, renewal, receipt etc. for journals received in the centre.

The Centre also runs a training programme of one year duration.

2.05 Inter - University Centre in Astronomy and Astro - Physics,
Poona University

The University Grants Commission has agreed to the setting up of an Inter-University Centre in Astronomy and Astro-Physics (IUCAA) at the campus of Poona University.

The main objectives of IUCAA are to provide a Centre of excellence within the university sector for teaching, research and development in astronomy and astrophysics as well as to promote nucleation and growth of active groups in this area in university. Besides conducting a vigorous research programme of its own, the Centre will enable workers from universities, teachers as well as students, to visit it for various durations for participating in research work and executing developmental projects. The aim will be to provide workers from university departments access to state of the art astronomical instrumentation, theoretical know-how, well equipped electronics laboratories, an excellent library, data centre and high quality computing facilities. The Centre will actively co-operate with universities in initiating and strengthening teaching and research in Astronomy and Astro-physics in the universities.

To achieve these objectives IUCAA will function on several different fronts. The IUCAA faculty will participate in teaching at the M.Sc. level in physics and astrophysics, and provide guidance to research students for a Ph.D. degree in astronomy and astro-physics in collaboration with various universities. The Centre will also facilitate the growing and nucleating of active groups in this area in universities. Further, it will coordinate participation of university academic community in major programmes in this field. The Centre will arrange refresher courses as well as advanced level schools and workshops in topics of

current research. This activity will involve experts from India as well as (in the latter case) from abroad, along the lines of the International Centre for Theoretical Physics (ICTP), at Trieste, Italy. In addition, the Centre will take up programmes for Science popularization. It will also foster collaborative research projects between groups in universities, IITs and other similar groups in India and abroad.

The observational programme will be taken up on the national facilities like GMRT and also on the international facilities by the participating university teachers and students in collaboration with the IUCAA and GMRT faculty. The Centre will have necessary laboratory facilities and different kinds of focal plane instruments and back-up equipment would be procured, maintained and used effectively. The electronic lab/optical bench etc. as well as trained electronics engineers will be provided.

The Centre will be registered under Societies Registration Act. The approval of Memorandum of Association etc. from the Government of India is awaited.

2.06 Information Centres in Humanities and Social Sciences:

The Commission has set up two Information Centres in the field of humanities and social sciences - one at the S.N.D.T. Women's University, Bombay and the other at the M.S. University, Baroda. The S.N.D.T. Centre covers disciplines like Sociology, Gujarati, Women's Studies, Home Science, Library Science and Special Education while the Centre at the M.S. university of Baroda covers Economics, Political Science, Education and Psychology.

The objective of the centres is to improve the information access to the teachers and students and to provide for bibliographic support as also to make available the latest documentation available in the respective disciplines.

The Centres have already started functioning and they are providing current awareness services and information and reference services. Resources available in university library and other local libraries are optimally utilised and services developed on a computational data base built up by scanning hundreds of Indian and foreign journals.

SECTION 3

COSIST PROGRAMME

- 3.01 The University Grants Commission on the recommendations of the Science Advisory Committee to the Cabinet (SACC) has launched a scheme on strengthening of infrastructure in Science and technology on a highly selective basis so as to get the best out of the already available academics in the country. This scheme is being handled in consultation with a high power committee, called the Standing Committee for Strengthening of Infrastructure in Science & Technology (COSIST). The basic objective of the scheme is to help the selected science and technology departments in universities/institutions which have already achieved/exhibited high quality performance to do even better and to raise their standards comparable to their counter parts elsewhere in the developed countries by providing them financial assistance in a big way to strengthen teaching and research infrastructure. The scheme started in the year 1983-84. In the beginning the preliminary data in respect of 381 science departments was placed before the COSIST Standing Committee. Out of these 72 departments were selected at the preliminary stage and, thereafter, through further scrutiny by the concerned subject experts, only 58 departments were selected for receiving the support upto January, 1987.

During the year 1987-88, the departmental profiles of 100 science and technology departments were screened and only 35 departments merited the support.

The programme has made a major positive impact on the development of teaching and research in science and technology departments of universities/institutions. Previously, the condition of many university departments

was unsatisfactory, notwithstanding their pioneer status and proven performance over several decades. It would be reasonable to say that these departments had suffered during the last two decades during which funding in IITs, relatively speaking, was extremely good. The Five Year Plan grants were very meagre and thus there was a compounded impoverishment of teaching and research potential.

The university departments are now in an exciting stage due to combined funding under Special Assistance Programmes (SAP) and COSIST Programmes as these are substantial, timely and free from usual time-consuming procedures. Many creative ideas which could not be implemented earlier for want of core facilities have now been tackled aggressively. The general attitude and academic atmosphere in the concerned departments and in the universities are exhibiting acceleration and there is tremendous enthusiasm for achieving excellence.

The university departments are now well placed to approach different agencies (DST)/CSIR/DRDO/ISRO etc.) for specific projects and can say boldly that the required infrastructure facilities are available to a considerable extent. Likewise, at some places, sponsored projects from public sector and private Companies have been undertaken by a number of COSIST supported departments. These departments are attracting scientists not only from India but from abroad also to work on specific projects for specific periods.

The present infrastructure facilities have improved teaching and instructions at the M.Sc. & Ph.D. levels and have enhanced the quality of teaching, specifically experimental part of the courses. It has also enhanced curiosity, analytical power, ability to conceptualise and

acquire deep comprehension of abstract concepts in totality, amongst students. In addition to this, the Programme has developed necessary initiatives and creative attitudes among the researchers and the students to become good scientists. With the COSIST input in these departments, one may notice that these laboratories have become up-to-date for conducting modern day post-graduate teaching and research.

A communication was sent to 58 departments supported under the COSIST programme upto 1987, requesting them to provide self-assessment of the impact of the programme on teaching and research in the concerned discipline. Some of the departments responded and the brief of their self-assessment is given below:

3.02 Bio-Sciences

In bio-sciences, the developments of recent years have been principally due to the developments in methodology coupled with high sophistication of equipment. The absence of these equipment, even in some of the centres of excellence, has been one of the limiting factors in undertaking projects of research in emerging areas of biology including different facets of bio-technology. In order to overcome this limitation, the COSIST programme was instituted in a number of departments in phases and the overall impact has been remarkable. The index of this impact is being reflected in a large number of quality publications in journals of national and international repute, strengthening of post-graduate teaching programmes, laboratories, organisation of instructional workshops and utilisation of resource scientists from India and abroad. The COSIST support has enabled the departments to achieve a considerable degree of autonomy in their functioning, which is so essential for

development of teaching and research in a meaningful way. The extent of activity generated with the marginal input of Rs.50-60 lakhs per department has been phenomenal and it has accelerated the pace of research and modern teaching to a significant extent. Modern areas of biology which have potential for achieving break-throughs not only in their fundamentals but also in the utilisation aspects of agriculture, horticulture and medicine have been introduced and strengthened.

The School of Life Sciences, Jawaharlal Nehru University: The impact of the COSIST programme on post graduate teaching and research has been a very positive and tremendous one. The impact can be assessed by a number of parameters as follows: number of students applying for national level test increased from 500 to 700 per annum; students are able to undertake research in interdisciplinary areas and the projects indicate a total effect of the science schools of the university; students are able to use highly sophisticated equipments such as NMR, FPLC, Ultra centrifuges etc.; a full laboratory course in Molecular Biology, Neurology, Tissue Culture and Radiation Genetics is being considered by the faculty for introduction; studies on enzymology, membrane transport, nucleic acids have been undertaken; there has been a spurt in publications in quality journals of international repute; the thesis-submission period has been considerably reduced because of the enhanced facilities; there has been an increase in the number of Ph.Ds. produced per year; more visits of scientists from institutions in India and abroad to this school for utilisation of its facilities; greater number of projects (62) funded by national and international agencies being handled and finally the number of national and international awards received by the faculty.

The school has already submitted a future proposal for the COSIST support on membrane biology and neuro-biology. Additionally the faculty is developing two programmes - one, in plant molecular biology and bio-technology and the other in bio-energetics of chloroplasts and mitochondria. The school has also been awarded support under Special Assistance programme of the UGC at the DSA level in the first instance because it has already achieved excellence due to the COSIST support.

The Molecular Biology Unit, Institute of Medical Sciences, BHU: The unit has built an excellent centre of molecular biology and it has almost all the normal facilities required for carrying out advanced teaching and research in molecular biology and genetic engineering. The equipment procured under the COSIST programme are being constantly used not only by the members of the unit but also by research workers of other departments of the university. Special care is being taken by the department for maintenance of these equipments, which certainly requires a considerable sum of money. Additionally, the department has developed an excellent library containing specialised journals on molecular biology and genetic engineering, which are not available in any of the libraries of the university. These journals are being procured from the funds provided under the COSIST support in concert with the funds received from other funding agencies.

Department of Botany, Calcutta University, Calcutta: At the department, both teaching and research programmes have been restructured and new courses have been introduced in different facets of chromosome research in the department of Botany. Newer lines of investigation involving quantitation of chemical components in chromosomes, identification of chromosome segments and their sequence

complexity have been introduced. Protein and other biochemical profiles in the genetic complement of both plant and mammalian systems are providing new insight into the genetic polymorphism of higher organisms. The cell and tissue culture techniques have been utilised not merely for preparation but for enrichment of genetic diversity and gene-pool of medicinal species of plants. The instructional workshop on chromosome research convened by this department with leading international experts from India and abroad as resource scientists dealing with modern areas of bio-technology is an index of the level of excellence achieved in India.

Considerable leadership both in fundamental and applied aspects of host-parasite inter-action has been developed at the Entomology Research Institute, Loyola College, Madras. The basic studies on this important problem cutting across both agriculture and environmental problems have been undertaken.

The researches on the structure of haemoglobin protein as well as the area of evolutionary Genetics in general have been considerably strengthened at the School of Biological Studies, Ahmednagar College, Ahmednagar.

Teaching and research facilities in the field of Muta-toxicity, fungal metabolism as well as different facets of amino acid metabolism have been generated at the Deptt.

of Bio-chemistry, Osmania University, Hyderabad. New practical curriculum for the students as well as introduction of project work at the M.Sc. level have been initiated.

The immediate impact of the COSIST programme in the department of Zoology, Delhi University, Delhi has been

successful introduction of restructured courses on neuro biology, cell physiology, molecular parasitology, membrane biology, gene manipulation and aqua-culture. This has strengthened the existing areas of teaching and research. The programme has provided enough impetus to accelerate the research work in the thrust areas.

The above analysis indicates that the COSIST support has helped develop a new culture of teaching and research ranging from student to faculty level. If the present rate of development is an index, one can visualize a fast change in the near future. There will be a wider base in the University system for achieving excellence in the fast developing areas of biology.

3.03 Chemistry

As per objectives of the programme, the teaching and instruction at M.Sc. and Ph.D. levels has improved in every department. In some departments, courses on the topic of national importance have been introduced. Upto 1987-88, there were 15 departments of Chemistry supported. The University of Delhi has started a short course on use of computer in chemistry which is very well received by students. Similarly, in the University of Jodhpur, the M.Sc. course has been re-organised and the positive impact is being felt both by the students and the teachers. In the of universities of Hyderabad and Poona, the courses have been modernised and new experiments have been introduced.

The impact of the programme on research has also been quite positive. In the University of Hyderabad, the research programmes have been designed with the objective of bringing about novel chemical transformations by the use of heat, light and sound and using low cost chemicals.

The Solid State and Structural Chemistry Unit of the Indian Instt. of Science, Bangalore, is the only one of its kind devoted to solid state and structural chemistry and has trained a number of solid state chemists, required for R&D, industries and academics. The work on superconductivity initiated in this department has caught world-wide attention.

With the infrastructure provided under the present programme, all the departments are publishing papers of international repute which are appreciated world-wide.

3.04 Earth-Sciences:

There are 11 departments which merited support under the present programme till 1987-88. It is noticed that there is a considerable enthusiasm created among the faculty and research workers in all these departments. New forward-looking research projects have been formulated in some departments and a number of major research programmes from DST and other organisations have been acquired by most of them. Curriculum development on modern lines has been taken up and inspite of various organisational hurdles, the tempo of research activities has gone up in all the departments.

At the Department of Geology, Kumaon University, the faculty members were already academically active in the thrust area programmes. With the COSIST input, the enthusiasm of researchers in the field of environmental geology and geo-dynamics has gone up. The programme at the Department of Earth Sciences, Roorkee University has boosted its high standard in research and as a result most of the publications are coming up in most reputed journals. The faculty is looking forward to develop high

quality teaching and research using the new acquired infrastructure facilities.

The programme at the Deptt. of Geology, M.S. University, Baroda, aims at developing front line research and post-graduate education in quaternary geology. Several new research projects partly in collaboration with the Physical Research Laboratory, Ahmedabad and the Deccan College, Pune, have been formulated. The faculty has already carried out some significant work on history of quaternary sedimentation in the coastal region of Gujarat and with the new facilities acquired, the faculty has gone forward to a detailed correlation of the quaternary geologic events of this region.

At the Geology Department, Presidency College, Calcutta, it is proposed that thermal ionization mass spectrometer and ICPL will serve not only the regional needs but also the national requirements in the field of geo-chronology. Such facilities do not exist in any other Indian university at present. The department has been able to attract two major research projects from DST and CSIR while some other programmes are being implemented with the COSIST/DSA assistance. The significant scientific contributions since the inception of the COSIST programme include:

- (a) Development of a viable model of the evaluation of the Archaeological and Singhbhum - Orissa craton, and
- (b) Discovery of evidences of fresh water sedimentation in the part of Cuddapahs of South India.

3.05 Physics:

Upto 1987-88, 13 departments of Physics were supported under the present programme. The curriculum has been updated and modernised in all the departments. The facilities approved under the programme have been procured and these are utilised by the department as well as by researchers from other institutions. Some of the departments have taken up studies on high T_c materials and their characterisation in wide temperature range. The cryogenic facility provided at IISc. Bangalore, has enabled researchers to take up studies like amorphous solids, glasses, high pressure low temperature studies and super fluid flow through narrow pore filters. Advanced research at cryogenic temperatures is envisaged with international collaborations. There is a good facility for materials preparation specially single crystals. This can also be used for preparing metallic glasses and some alloys. The electron microscope provided at BHU has attracted the attention of research workers all over the country. About 35 per cent of the facility is being used by scientists from other institutions. Similarly, facility generated at the Department of Physics, Poona University, has enhanced the quality of teaching at post-graduate level. Further work in the area of energy materials and material science is being carried out at these departments with the infrastructure provided under the programme.

3.06 Engineering & Technology:

In the first phase of the programme (1984-85), there were only 6 departments of Engineering & Technology supported under the programme. Later on, 17 more departments merited the support upto 1987-88. Prior to this programme, the position of most of the engineering and

technology departments was rather unsatisfactory. These departments had perhaps suffered a lot during last two decades, during which newer institutions were provided substantial support for teaching and research. The five year plan grants were meagre and thus, there was no possibility of improving the infrastructure in these departments. Some of the departments have approached other funding agencies as well as private and public sectors to get specialised projects. The department of Chemical Technology, Bombay University, has established good collaboration with private companies as well as received support from DST, CSIR, DRDO etc. Similarly, other departments are approaching different agencies for further support on the basis of infrastructure provided under the present programme. The work of some of the faculty members has been recognised at national and international levels, they being recipients of awards such as Bhatnagar award, INSA fellowship, etc. With the present support there is a great enthusiasm in the faculty to do intensive work in the thrust areas identified. There is an increase in the enrolment of research scholars as well as number of publications by the faculty and research scientists.

A list of the departments supported under COSIST Programme is given at Appendix-XII(a).

SECTION 4

MAINTENANCE AND COORDINATION OF STANDARDS

- 4.01 The National Policy on Education (1986) has brought in its wake a heavy responsibility on the Commission to ensure coordination between the need for maintaining quality through proper consolidation of the existing facilities and the need for expansion in order to meet the developmental requirements of the country, especially the need for the trained personnel produced by the university system.

Section 12 of the UGC Act lays down that "It shall be the general duty of the Commission to take, in consultation with the universities or other bodies concerned, all such steps as it may think fit for the promotion and coordination of university education and for the determination and maintenance of standards of teaching, examination and research in universities." Accordingly, efforts of the Commission have been directed towards the maintenance and coordination of standards as well as development and special programmes in the university system. Academics have also been appointed in the Commission from the university system to advise the Commission on various academic matters and to operate specialised schemes.

4.02 UGC Programme on Superconductivity

The recent excitement in the area of high temperature superconductors has opened up entirely new vistas of research, engineering and applications. In many of our higher educational institutions, scientists comprising of physicists, chemists, material scientists and metallurgists have come together to undertake theoretical as well as

experimental studies on various aspects of superconductivity. It is because of the very nature of the new technology that theorists and experimentalists of all kinds have to work together to generate a high level activity in educational institutions. Success in this frontier area of R & D needs tremendous amount of energy and involvement of young research students as well as close interaction between educational institutions, research laboratories and industries.

The political will of the highest order to promote R & D activities in this area is evinced by the fact that a high level apex body on superconductivity has been set up under the Chairmanship of the Prime Minister of India.

Immediately after the constitution of the National Apex Body to oversee the R & D activities on superconductivity, the University Grants Commission in cooperation with technical education wing of the Department of Education in the Ministry of Human Resource Development has also taken steps to identify viable groups in educational institutions who are already associated with research and development in this exciting area, or are in the periphery and could be activated with some support.

The Commission impressed upon the Vice-Chancellors of the Universities/Institutions deemed to be universities and IITs to organise group discussions involving people from departments of Physics, Chemistry, Engineering, Metallurgy etc. with a view to formulate appropriate strategies to strengthen research in this front line area and spell out their urgent requirements which would enable them to forge ahead with the activity vigourously.

It is envisaged by the UGC to ensure that

- (a) interdepartmental cooperation is promoted in the institutions for pursuance of this activity,
- (b) essential equipments, staff, consumables, if required, be made available on priority basis,
- (c) appropriate linkages are established between different universities/institutions which are involved in the endeavour,
- (d) linkages are established between universities and other laboratories as well as industries for applications,
- (e) researchers are encouraged to attend workshops/seminars/conferences either at national or international level,
- (f) necessary feed back is provided to the National Apex Body and Programme Management Board.

In order to accomplish this task the Commission has constituted a Standing Committee on Superconductivity to advise it on various aspects on superconductivity research and to

- i. identify viable groups;
- ii. identify the relevance of their research and to examine if it could be modulated in the right direction;
- iii. identify condensed matter scientists who could be oriented in this direction;

- iv. establish inter-institutional linkages as well as linkages between academic institutions with other laboratories and industries;
- v. provide inputs to the researchers which are essential to activate them;
- vi. evolve mechanism through which funds to universities and IITs can flow without any bottleneck.

Considering the importance of this activity, the Commission had earmarked a couple of crores of rupees to support this activity in universities/institutions deemed to be universities during the years 1987-88 and 1988-89.

Proposals from 13 institutions were received in Phase I. These proposals were scrutinised by the UGC Standing Committee on Superconductivity in its first meeting held in July, 1987. The Committee, after a very careful examination, recommended for funding/recasting of these proposals according to their merit. The Committee agreed that such educational institutions which have shown some interest in this endeavour should be given incentives to keep their interests alive.

In the second meeting of the Standing Committee held in January, 1988 another set of proposals was scrutinised. A list of universities/institutions supported under the programme is given at Appendix-XIII.

It was re-emphasised that research and training in educational institutions on Superconductivity may not be construed as an isolated programme, but should be inter-linked with specific objectives and guidelines. It should be in conformity with the national perceptions. The role of educational sectors is very important and cannot be

overlooked as these are the nodal points for man-power development. In this context it may be pointed out that Inter-University Centre (such as Nuclear Science Centre) may be set up which can provide all facilities for experiments, computation, libraries etc., in this area to scientists, teachers and students without any bottleneck. If a small core staff can be appointed to manage it with an advanced vision, users may go and do their work of interest at the Centre with minimal formalities. This will provide an opportunity to young people in educational institutions.

R&D work in the area of superconductivity is such through which collaboration between institutions with partial competence and the advanced ones, is possible. This will promote inter-departmental interaction as well as interactions between institutions of higher education and other laboratories and industries as all kinds of scientists can contribute in this endeavour.

We know that the mobility of teachers and students in the universities is highly limited. They do not get opportunity to visit institutions where active work is in progress. With this in view the universities have been funded to facilitate the researchers to travel widely within the country and if need be, outside the country. This is particularly important because things are moving very fast in this area of research.

The most important task ahead is development of materials for superconductivity activity and preparation of wires, tapes etc. for practical applications. Unless there is a larger participation from the university system, the programme may not get a fillip as universities are best places for both fundamental and applied research.

This endeavour will require new breed of motivated people who cannot be imprisoned with one discipline but should be willing to switch over to inter-disciplinary activities as research and development in this area requires cross-fertilization of ideas.

It is observed that in the curriculum of the universities either the superconductivity element is missing or a very small part is included in it at post-graduate level. There is an urgent need to develop educational programmes/curriculum, to educate people about superconductivity and its importance. This is to be done by the joint efforts of Physicists, Chemists, Engineers, Technologists, Scientists, Educationists, etc. However, it has to be a realistic approach. It is to be ensured that right kind of experiments, theory elements and teaching aids are to be included in the curricula at different levels of education. The research work which was done few years back should become a part of students' teaching/experiments. The dissertations for M.Sc., M.E. and M.Tech. which are presently not very relevant to the national needs may be reoriented in the area of superconductors and if need be this may be done with inter-departmental guidance. A letter has been written to all the universities in this respect. Most of the universities have responded that they are going to modify their regulations for such inter-departmental guidance of Ph.D. and Master's programme.

4.03 National Education Testing:

During the year 1987-88, junior research fellowship (JRF) examination was held in various disciplines falling under the faculties of social sciences and humanities (including languages). A list of these subjects is given at Appendices-XIV (a) and (b). A total number of 19,997 candidates were registered for this examination out of

which 11,230 appeared. The Committee appointed by the Commission decided to declare 842 candidates eligible for the award of junior research fellowships. The Committee also decided to withhold the results of those candidates (out of the 842 declared eligible) whose final year postgraduate examination results were yet to be declared by the universities. Such candidates would be declared successful after they qualify their postgraduate examination securing at least a second class. Subject-wise break-up of the number of successful candidates is given at Appendix-XV.

The junior research fellowship examination in science subjects was conducted jointly by the UGC and the Council of Scientific and Industrial Research (CSIR) in March, 1988. A list of the subjects in which the examination was conducted is given at Appendix-XVI.

4.04 Restructuring of Courses

The scheme of restructuring of courses was initiated by the Commission during the 7th Plan period with a view to making the first degree courses more relevant to environment and to the developmental needs of the community and to link education with work/field/practical experience and productivity.

The Policy Frame on 'Development of Higher Education in India' adopted by the Commission in 1978 states:

"A major programme of reform of higher education is the restructuring of courses at the undergraduate level to make them more relevant and significant, not only to the students but also to the nation as a whole by assisting social transformation and national development." It is considered essential as part of the restructuring of courses

that every undergraduate student should be given a grounding in four important areas:-

- i. A set of foundation courses which are designed to create an awareness of areas such as Indian history and culture, history of the freedom struggle in India and other parts of the world, social and economic life in India including concepts and processes of development, the scientific method including the role of science and technology in development, alternative value systems and societies based thereon, cultures of Asia and Africa (selected countries) and Gandhian thought.
- ii. A set of core courses which will give the student an opportunity to acquire a broad familiarity with some chosen disciplines, including a study of one or more of them in depth;
- iii. Some applied studies/projects/field activity which will form an integral activity of the course and will be carried out in the final year, and
- iv. Involvement in a programme of national or social service for the first two years.

As on 31.3. 1988, 10 Universities and 134 colleges had introduced restructured courses under the scheme.

4.05 College Humanities and Social Science Improvement Programme (COHSSIP):

College Humanities and Social Science Improvement Programme was introduced in 1974-75. The Programme is aimed at improving the quality of humanities & social sciences learning at two levels viz., in selected

colleges and in university departments by way of University Leadership Project (ULP). The total number of colleges assisted under this programme upto 31st March, 1988 was 470 in the first phase and 74 in the Second phase.

The number of University departments participating under the programme of ULP was 12 upto 31st March, 1988. During the year, the subject panels identified some more departments which could be selected for participation under the programme.

4.06 Panels in Humanities and Social Sciences:

The Commission set up panels of experts in various subjects in the humanities & social sciences in the year 1974. These panels advise the Commission in all matters related to the maintenance and improvement of quality of teaching and research in the universities.

These are reconstituted once every two years. During the year 1987, the following 16 panels were reconstituted for a term of two years.

- (i) English and Western Languages
- (ii) Classical Languages
- (iii) Oriental & African Languages & Literature
- (iv) Linguistics
- (v) Law
- (vi) Fine Arts & Art History
- (vii) Philosophy
- (viii) History
- (ix) Economics
- (x) Political Science
- (xi) Sociology
- (xii) Anthropology

- (xiii) Commerce
- (xiv) Psychology
- (xv) Social Work Education
- (xvi) Education.

Some of the important recommendations made by the panels during 1987-88 are given below:

4.07 English & Western Languages:

The department of English, Jadavpur University, Calcutta has been recommended for participation under the Programme of Special Assistance. Similarly, the departments of English at the universities of Rajasthan, Rani Durgavati, Ranchi, Kerala and Gujarat have been recommended for participation under the programme of University Leadership Project.

The Commission received a note on 'Qualitative Improvement of Research in Humanities and Social Sciences' and referred it to the subject panels for consideration. The panel on English and Western Languages suggested that it would be desirable to follow the American pattern of research rather than the British one so that we can at least ensure the growth of a research scholar by insisting on him to take courses in the related and inter disciplinary areas of study before the scholar starts writing his thesis.

The panel further felt that what one often lacks was a firm grasp on methodology while taking up research. In this connection, it was suggested that seminars and conferences on research methodology may be organised for the benefit of research scholars. It was further felt that knowledge of more than one western language was necessary in any research work which was comparative in nature. This was true not only in literature but in other branches of social

sciences as well. The researcher should go through the original works and sources on the respective languages so that his contributions and findings could be more authentic.

In discipline like English there could be M.Phil dissertation based on the translation of a work in a foreign language which was creatively significant. While undertaking translation, the scholar may incorporate the linguistic features of the original and also write a detailed introduction regarding literary merit of the translated piece. In respect of languages such as Russian, German, French and Spanish, the same exercise i.e. translation of classics could be undertaken.

The following themes for organising national and international seminars were identified.

- a. French Canadian Literature
- b. Research Methodology
- c. TS Eliot
- d. International Symposium and folklore in slavic and Indian literatures.

The Panel identified the areas in which books may be written and also suggested names of the scholars who may be requested to write books.

4.08 Classical Languages:

To avoid duplication of research, the panel recommended that information may be collected on the Ph.D. theses approved and also the research projects completed in

classical languages. The following universities were identified for undertaking the above task:

- | | | |
|------|---|---|
| i. | Sanskrit | Centre of Advanced Study in
Sanskrit, Poona University |
| ii. | Pali, Prakrit,
Buddhist Studies and
Tibetan | Department of Buddhist
Studies, Delhi University. |
| iii. | Arabic and Persian | Department of Persian,
Aligarh Muslim University. |

4.09 Oriental & African Languages & Literature:

The Panel recommended that the status report in various languages may be prepared by the members and while doing so, they may collect information regarding the Ph.D. theses completed as well as ongoing in universities, which will help in disseminating the knowledge to the scholars working in various research institutions. It was also recommended that under the scheme of 'restructuring of courses', courses of classics which have been translated in Indian languages and Literature and Comparative literature may be included.

4.10 Linguistics:

For qualitative improvement of research, the panel recommended that information regarding M.Phil and Ph.D. dissertation - completed and ongoing, may be circulated to various departments of linguistics. It was also suggested that a meeting of research scholars may be held atleast once a year in order to acquaint them with the research methodology and help them understand each other's problems.

The proceedings of such meetings could be circulated to the departments. The CIEFL, Hyderabad was requested to undertake this task.

The panel identified the following courses which could be started under the scheme of Restructuring of courses:

1. Computational Linguistics
2. Neuro - Linguistics
3. Language in Mass Media
4. India as a unified linguistics area

4.11 Law

The Panel identified several areas of research such as Law and Poverty, Law and Religion, Law and Environment, Law and Women, Participation of Labour in Management, Law and Administrative Process, Law and Children, Law and Minorities, Law and SC/ST and Law and Weaker Sections.

The following themes were identified for organising seminars:

Theme	Name of the University
-----	-----
i. Constitutional Law	Allahabad University
ii. Industry and Law	Bombay University
iii. Social Legislation with particular reference to workman.	Vikram University
iv. Law and Environment	Cochin University
v. Law and Medicine	Banaras Hindu University

4.12 Fine Arts & Art History:

The panel recommended that the department of Fine Arts, Panjab University, may be considered for participation under the Special Assistance Programme.

4.13 Philosophy:

The panel recommended that the departments of Philosophy at the universities of Andhra, Allahabad and Poona may be considered for participation under the Special Assistance Programme and that of the Karnatak University under the University Leadership Project.

While considering the recommendations for qualitative improvement of research, the panel felt that coordination between the beneficiaries of the departments participating under programmes of CAS, DSA, DRS and other departments may be brought about for the purpose of monitoring of research work undertaken. The following themes were recommended for the organisation of seminars:

Theme	University / Venue
-----	-----
i. Seminar on Radhakrishnan	Madras University
ii. Shankaracharya	Allahabad University
iii. Tradition and Revolution	North Bengal University
iv. Purushartha- Analytical Study of the Indian value system.	Utkal University

v. Recent trends in
Marxist thoughts

Panjab University,
Chandigarh.

4.14 History:

The panel recommended that the Centre for Historical Studies (JNU) and the departments of history at Calicut, NEHU, Utkal and Karnatak universities may be considered for participation under the Special Assistance Programme.

The panel suggested that some aspects of economic history may be introduced in the syllabus of the junior research fellowship test in history, and an analysis of the existing syllabus as also of the papers set in the examinations so far may be undertaken by the Indian Council of Historical Research. The panel also desired that the topics of Ph.D. theses be circulated to the various universities in order to avoid duplication of work. It was felt that in research, emphasis may be given on the collection of source material.

4.15 Economics:

The panel recommended that the departments of Economics at the universities of Utkal, Jodhpur, Bharatidasan, Nagarjuna, Kerala and Mysore may be considered for participation under ULP while the Centre for Economic Studies and Planning, Jawaharlal Nehru University and the department of economics, Rajasthan University be considered under the Special Assistance Programme.

4.16 Political Science:

The panel recommended the following themes and also identified universities for organisation of seminars on different topics in Political Science:

Theme -----	University -----
i. Public and Public Policy in India's Foreign Affairs.	Bombay University
ii. Civil Society and Political Process in India	Bombay University
iii. India's National Security Policy : Orientation Formulation, Implementation and Performance	Hyderabad University
iv. Administration and Social Change in India.	Calcutta University

The panel recommended the departments of Political Science at the universities of Andhra and Gauhati for participation under the University Leadership Project.

It was also recommended by the panel that three or four departments may be considered for participating under the Special Assistance Programme on the basis of their departmental profiles.

4.17 Sociology:

The panel recommended that the departments of Sociology at the universities of Gorakhpur, Bharathiar, Rajasthan and Marathwada may be considered for participation under the University Leadership Project and the department at Lucknow University under the Programme of Special Assistance.

The panel, while considering the steps to be taken for qualitative improvement of research, felt that the main initiative should rest with the universities. It also suggested that, while continuous efforts should be made for curriculum development and innovation of syllabi by a university, efforts to improve standards should not lead to complete uniformity. Each university should be allowed to develop, within a broad framework, its own special interests and pursuits.

The panel recommended that courses on economic sociology, political sociology, sociology of family and freindship and sociology of religion may be considered for support under the scheme of Restructuring of Courses.

4.18 Anthropology:

The panel recommended that the departments of Anthropology at the universities of Gujarat Vidyapeeth, Sri Venkateswara, Andhra and Gauhati may be considered under the Programme of Special Assistance.

Taking note of the fact that Anthropology was included under social sciences and humanities, the panel observed that it was an essential part of the teaching of Anthropology to have adequate laboratory space, museum

facilities and practical/field training for running a proper modern department of Anthropology with physical, social and history components.

The panel recommended that there should be adequate arrangements for coordination of research information in Anthropology generated by the university system and other research institutions in the country.

All the departments of Anthropology should take up the responsibility of undertaking multi-intra-disciplinary (i.e. physical, socio-cultural and Paleo anthropological) studies of the people and their culture in the hinterland region. It is expected that continuous involvement in such programmes would generate original theoretical as well as methodological insights among the scholars in the university system.

The panel identified the following themes in which workshops/refresher courses may be organised:

Theme -----	University -----
i. Anthropology Ageing	Ranchi University
ii. Dental Anthropology	S.V. University
iii. Ethno-sciences and new Ethnography	Calcutta University
iv. Anthro - Techniques and Methods	Delhi University
v. Recent trends in Paleo Anthropology	Deccan College, Poona

4.19 Commerce

The panel expressed its concern regarding the standard of the Ph.D. programme in commerce undertaken in the universities. In this connection, it was decided that Research Advisory Committees may be constituted in each department to strengthen the Ph.D. programmes. The Research Advisory Committee of a department may consist of senior faculty members and one or two external experts, wherever necessary. The Committees may examine the viability and relevance of the research topics after discussing with candidates regarding their detailed synopsis for the programme.

The panel felt that before a Ph.D. thesis is finally submitted, candidates should be asked to present a seminar before the faculty members and interested researchers in the field. It would be desirable on the part of the candidates to incorporate the points raised therein in the thesis.

The issue of pre-doctoral courses was considered and it was felt that though necessary, it may not be practicable at the moment. It was also decided that research workshops should be organised at six or more university departments on a regional basis and every Ph.D. student should compulsorily attend them. The panel identified the following universities for holding workshops:

- a. Delhi University
- b. Panjab University
- c. Madras University
- d. Gauhati/Utkal University
- e. M.S. University of Baroda/Saurashtra University
- f. Osmania University

To overcome the problem of overlapping in Ph.D. topics, it was decided that some sort of clearing house or data bank be established. The university of Allahabad was identified for this purpose and it was recommended that necessary financial assistance may be made available to the university.

The following themes were identified for organising workshops:

Theme -----	University -----
i. Emerging dimensions in Marketing studies.	Allahabad University
ii. Contemporary issues in Financial Management	Delhi University
iii. Formulation and Appraisal of Projects of Small Business Enterprises	Srinagar University
iv. Contemporary issues in Organisational Effectiveness	Madras University
v. Business Applications of E.D.P.	Banaras Hindu University
vi. Emerging Trends in the Accounting Discipline	M.D. University, Rohtak
vii. Industry-University Linkage in Business Education & Research	Delhi University

4.20 Psychology:

The Panel recommended that the departments of Psychology at the universities of Osmania, Calcutta, Baroda, Punjab and Bhopal may be considered for participation under the University Leadership Programme.

It was further recommended that a two-week workshop may be held in order to facilitate interaction between senior research psychologists on the one hand and those who are planning new research proposals in the field of Psychology on the other. This workshop may be a forum for intense brain storming sessions to discuss research proposals by those who have published quality research in the field and those who are planning new projects which would help in the identification of not only relevant topics for research but also the development of appropriate designs of research and adequate methodology.

The panel recommended the following themes for holding workshops at different university centres:

Theme	University
-----	-----
i. "Consciousness" Studies	Andhra
ii. Psycho-Linguistics	Utkal
iii. Research Methodology	Osmania
iv. Social Change & Development	Allahabad
v. Culture and Behaviour	Allahabad

4.21 Social Work Education:

The panel recommended that the department of Social Work at the universities of Madras, Udaipur, Jamia Millia Islamia and Nirmala Niketan may be considered for support under the Special Assistance Programme.

4.22 Education:

The panel recommended that the faculty of education, M.S. University of Baroda be requested to undertake the following:

- i. Preparation of a list of topics for undertaking research in higher education.
- ii. Role of Teacher Education in music, dance, yoga, physical education etc. This has to be promoted through training of graduates of such subjects or B.Ed. degree course with a view to promoting the idea of aesthetic education in the community & schools.

4.23 College Science Improvement Programme (COSIP)

The programme, initiated by the Commission in the year 1970-71, aims at bringing about qualitative improvement in the teaching of science subjects at the undergraduate level. The purpose of the programme is to accelerate the capabilities of undergraduate science students and initiate a process of continuous self renewal. The programme has brought about awareness of the importance of science education both at college/university level.

The implementation of the programme is being reviewed in the light of the new demands made by the National Education Policy. As on 31st March, 1988, COSIP was implemented in 293 colleges and 40 university departments.

4.24 Panels in Science Subjects

The Commission constitutes, once in every two or three years, panels of experts from universities and other institutions to advise it on matters relating to the

present status and standards of teaching and research in the concerned subjects and on improvement of teaching standards and relating education and research to the emerging national needs. The subject panels periodically review syllabi at undergraduate and postgraduate levels to make courses upto date and relevant to the regional and national needs.

On the advice given by the panels, appropriate measures are taken by the Commission.

The panels also identify outstanding teachers and research workers in the concerned subjects, who are invited by the Commission to visit universities/colleges to give a series of lectures, participate in their academic programmes and establish effective contacts with teachers, students and research workers in these institutions. The panels also give expert advice for providing support for research by identifying thrust areas of importance in the subjects concerned.

Some of the important recommendations made by various science panels during 1987-88 are given below:

4.25 Chemistry:

The panel recommended that workshops may be organised on

(a) Molecular recognitions and

(b) Hydrophobic Surfaces

It also recommended that the chemistry departments of the universities of Madurai Kamraj, Burdwan, Bharatidasan & Roorkee be considered under the Special Assistance Programme.

4.26 Geography:

The panel has recommended that students of Geography should be allowed to take the Indian Forest Services Examination. It also recommended the setting-up of an Earth Resources Data Management Centre, which could be utilised by the earth scientists for qualitative improvement of research.

The panel identified Advanced Cartography and Recent Advances in Geomorphology for the organisation of workshops.

The panel also recommended that two national conferences on energy use in Indian agriculture be organised.

4.27 Physics:

The panel recommended that workshops may be organised in the following areas:

- i Physics teaching at the undergraduate and postgraduate levels in Universities and Colleges.
- ii. Quantum mechanics
- iii. Statistical Physics
- iv. Mathematical Physics
- v. Experimental methods in Physics.

The panel also recommended that the Physics departments of the universities of Jadavpur, M.S. University of Baroda, Madurai Kamraj and Nagpur be considered for inclusion under the Special Assistance Programme.

4.28 Mathematics:

The panel felt that there was need for intensive training programmes for teachers and postgraduate students. In this connection, it recommended the organisation of three workshops, each in Pure Mathematics and Applied Mathematics, for a period of three years and one conference for the mathematics teachers. On the recommendation of the panel, the Commission partially funded the National Symposia on "Tropical Micro-meteorology and Air Pollution" organised at the IIT, Delhi.

Ten major research projects were also recommended by the panel for support by the Commission while the mathematics departments of the universities of Burdwan, Maharishi Dayanand, Mysore, Sardar Patel and Rajasthan were recommended for consideration under the Special Assistance Programme.

4.29 Geo-Sciences:

The panel desired that a list of video cassettes on educational programmes, particularly on inter-disciplinary areas and on emerging frontier subjects, should be prepared. This list, giving addresses of producers/suppliers of the cassettes, should be circulated to the universities/ educational institutions.

The panel also recommended organisation of refresher courses on various important areas of study.

4.30 Bio-Sciences:

The panel recommended that a pragmatic plan of action for improvement of teaching/training in bio-sciences may be prepared. The panel is also engaged in identifying thrust

develop modalities for interaction between universities and industry.

M.Sc. electronics science course has been started on the recommendations of the panel in the universities of Calcutta, Delhi and Poona. It is contemplated that by the year 1990, ten university departments would be able to start the course. The programme is being jointly supported by the Department of Electronics (Govt. of India) and the University Grants Commission. The Department of Electronics is contributing towards equipment and books while the Commission is providing assistance for building and staff. The panel also finalised new guidelines for developing courses in electronics in Universities.

4.32 Relativity and Cosmology:

The Commission has constituted a national-co-ordinating committee to promote teaching and research in the areas of relativity and cosmology. The Committee recommended that schools in relativity and cosmology be organised for university and college teachers. In view of the dearth of good books on the subject, the committee also recommended that books be written by Indian authors on the following topics:

- i. General Relativity & Advance;
- ii. Unification.

An expert group has been constituted for working out a modern syllabus on relativity and cosmology at the P.G. level for Physics and Mathematics.

A scheme of 'graduate school' aimed at improving and establishing the background knowledge of general relativity and differential geometry is proposed to be operated during 1988-89 and subsequent years.

An international conferences on "Gravitation and Cosmology" was held at Goa during the year in pursuance of the recommendations of the Committee.

4.33 Indian Middle Atmospheric Programme (IMAP):

The Commission has been providing financial assistance to university scientists for undertaking multi-department/agency, co-operative and coordinated national programme to study the middle atmosphere over the Indian Sub-Continent. Under the programme, considerable progress has been achieved in initiating new projects, development of new instruments and operation of cooperative research. Research projects submitted by university scientists are also processed by the IMAP Co-ordinating Committee and, on their recommendation, funded by the UGC.

The progress of this programme was evaluated at an Inter-agency meeting and it was decided that the participation of university scientists in the Indian Middle Atmosphere Programme be continued upto March, 1989 to keep in line with the International Middle Atmosphere Cooperation (IMAC). The Commission has also agreed to contribute towards the establishment of a data centre to be established under IMAP.

4.34 University Science Instrumentation Centre (USIC) and Regional Instrumentation Centre (RIC):

The Programme was initiated during the year 1976 with the following objectives:

- i. to repair and service instruments
- ii. to design and fabricate attachments or modification to the existing equipment and
- iii. to train instrument scientists and technicians to develop instrument R & D and to provide analytical services by pooling together major equipment in the different departments under the common instrumentation centre.

The Commission has so far approved the proposals of 58 universities for setting up of USICs. The implementation of the scheme of USICs is under review. Meanwhile, the standing Committee on USICs recommended that planned efforts be made for manpower development in instrumentation in a few selected USICs.

The Commission also provides assistance to the Regional Instrumentation Centre at the Indian Institute of Science, Bangalore and the Western Regional Instrumentation Centre, Bombay University. The Centres coordinate the functioning of USICs and train resource personnel, provide service and maintenance facilities and design new teaching aids.

4.35 Science Education Journals:

The Commission continued to support publication of quarterly journals in Physics Education, Mathematics



Education, Biology Education and Chemistry Education. The journals provide a forum for exchange of ideas on innovation in teaching, new curricula and educational technology, both software and hardware.

4.36 Development of multi-disciplinary teaching and training in Bio-technology (Department of Bio-technology- U.G.C. Collaborative Programme)

It was jointly agreed by the Department of Bio-Technology (Govt. of India) and the University Grants Commission that the universities having active research groups in the area of biotechnology may be strengthened on a selective basis for teaching and training in biotechnology.

The following universities were identified since 1985-86 for the implementation of M.Sc./M.Tech. courses in Bio-technology:

S.No.	University	Courses offered
-----	-----	-----
i. Banaras Hindu University		M.Sc.
ii. Jawaharlal Nehru University		M.Sc.
iii. Poona University		M.Sc.
iv. M.S. University of Baroda		M.Sc.
v. Madurai Kamraj University		M.Sc.
vi. Jadavpur University, Calcutta.		M.Tech.

The NBTB is providing financial assistance for equipment, building, books and journals, contingencies, academic staff salaries and studentships. The Commission is paying the salaries of administrative and technical staff and a part of building construction cost. During the year, the Commission also agreed to provide two junior research fellowships at each centre for pursuing Ph.D. in biotechnology. Assistance is also provided to the

universities for organising workshops/seminars in Bio-technology. The programme is to be reviewed jointly by the NBTB and UGC during 1988-89.

4.37 Development of Ocean Science and Technology

The Commission is collaborating with the Department of Ocean Development (DOD) for the development and augmentation of Ocean Science and Technology in the university sector. The need for such collaboration and joint funding by the Commission and the Department of Ocean Development has arisen because certain universities, particularly those located in coastal areas, have developed facilities and expertise to train the necessary manpower for the user agencies and to advance the learning of the Marine Sciences. Formulation of perspective plan in teaching, training and research with other institutions has been taken up.

4.38 Atmospheric Sciences:

Considering the future of meteorological atmospheric sciences, the employment opportunities for trained persons and the super computer system being set up by the Council of Meteorological and Earth Science for medium-ranged weather forecasting, the Commission has launched a programme to start post-M.Sc. courses in atmospheric sciences in the following universities/institutions deemed to be universities viz., Cochin, Andhra, Calcutta, Gujarat, Poona, Roorkee and the Indian Institute of Science, Bangalore.

The following components of the educational programmes in atmospheric sciences have been identified:

- a) Observational aspect of the atmospheric phenomena;

- b) Fluid Mechanics;
- c) Thermodynamics;
- d) Dynamical Meteorology;
- e) Computer Science;
- f) Numerical modelling;
- g) Modern Observational Techniques.

Universities are expected to start these courses from 1988-89 onwards.

4.39 National Accelerator User's Committee:

The Commission agreed to the utilisation of the following facilities at Variable Energy Cyclotron, Bhabha Atomic Research Centre (BARC), Calcutta by University scientists:

- (i) Target Laboratory;
- (ii) Detector Laboratory;
- (iii) Scattering Chambers
- (iv) Electronics Facility
- (v) On-line data acquisition and processor system and
- (vi) Magnetic Neutron facilities.

An expert committee constituted by the Commission has been co-ordinating the activity. The research projects which require experiments to be done with the assistance of the Cyclotron are considered by the Committee. On the recommendations of the Committee, the Commission provides assistance to the university scientists for research staff, contingencies, T.A./D.A. to visit VEC (Calcutta) and for procurement of targets.

At present 17 research projects undertaken by the university scientists are under implementation.

4.40 Mass Communication and Educational Technology:

A massive expansion has taken place in the communication infrastructure in the country. The expansion of T.V. net work has been phenomenal with the launching of INSAT-1B. A large number of low power/high power transmitters have been installed all over the country to relay television programmes from the Satellite to urban areas, while direct reception sets which would receive signals directly from the Satellite are being installed in clusters of villages. Radio has extended its reach to the farthest corner of the country. The 'country wide class room' project launched by the UGC has been a logical outcome of such phenomenal development of the electronic media and its availability for the spread of education. The 'countrywide classroom' programme is a large scale educational programme providing access to higher education to students in small towns by utilising good teachers and high quality audio-visual material. It is a unique educational programme harnessing the power of the 20th century medium i.e. television. The programmes are telecast daily for two hours on the Doordarshan network through INSAT-1B. The programmes, meant for undergraduate students, are of enrichment type and in English for the present. They function as a spring board in motivating learning, bringing exciting advances and epoch-making events, imparting improved understanding of the world around us and broadening mental horizons. There are also special programmes for teachers in higher education to enable them to handle their job more effectively. The Commission arranged to provide colour TV sets to colleges through placing bulk purchase orders with public sector undertakings. Part assistance had been provided to the colleges to procure colour TV sets during the 6th Plan period.

The Commission has set up 4 Educational Media Research Centres (EMRCs) and 7 Audio Visual Research Centres (AVRCs) in universities and colleges. The EMRCs are at Jamia Millia Islamia, Poona University, Gujarat University and the Central Institute of English and Foreign Languages (CIEFL), Hyderabad and they are fully operational. The AVRCs are at the Anna University, Madurai Kamraj University, Osmania University, Roorkee University, Jodhpur University, Kashmir University and St. Xavier's College, Calcutta and the facilities are in various stages of being set up. Proposals are also invited from universities and colleges to participate in the programme by producing TV programmes with the help of private production agencies on contractual basis. A map indicating the location of AVRCs and EMRCs may be seen at the end of the report.

Foreign programmes telecast during the first few months of inception are being replaced by Indian ones. With the efforts of the EMRCs, AVRCs and the UGC-INSAT Project Co-ordination Cell, as much as 60% of the programme content is now Indian. Manpower development and training is an important component in the use of educational media. The Educational Media Research Centres have organised workshops to expose the academics and persons associated with the Media Centres, for programme production, use of equipment, effective utilisation of the broadcasting medium as well as to motivate them in software making.

As part of periodical training programmes, the following workshops were held during the period:

- 1) Indo-French workshop on TV production techniques for EMRCs/AVRCs held at MCRC, Jamia Millia Islamia, New Delhi in which 16 persons participated.

- ii) Workshop for technical personnel of UGC Media Centre at Central Institute of English and Foreign Languages, Hyderabad in which 12 persons participated.
- iii) Camera workshop for technical personnel of UGC Media Centres at EMRC, Pune in which 20 persons participated.
- iv) Training programme for Mass Communication students of Kashmir University held at EMRC, Gujarat University, Ahmedabad in which 31 students of Kashmir University participated.
- v) A countrywide class room exhibition organised at the 75th Indian Science Congress held at Pune from 23rd December, 1987 to 15th January, 1988.

The Programme of Action (POA) on the National Policy of Education (1986) envisages, to begin with, the production of model course material in 15 subjects in the form of Audio/Video cassettes with the help of best available teachers in the next three years. The material could also be used for self-instruction and put out as Video/TV broadcast. Eventually, such material is proposed to be made available as multi-media package. In this connection, the Commission has taken up a project on 'Non-broadcast Mode Educational Material'. A Committee has been constituted to advise on matters relating to the preparation of model video course material for undergraduate students. 15 subjects have been identified for the production of model video course material and eight production centres have been identified for the purpose.

4.41 UGC Film Study Centres:

The Commission has set up Film Study Centres in selected universities and colleges with the following objectives:

- (a) to increase awareness of film as a modern art form and of the Cinema as a 20th Century medium of social communication and education by exposing students to international and Indian film classics of various genres in a systematic manner.
- (b) to organise discussions, symposia, lectures and courses and publication on any aspect of film in support of the promotion of film culture on the campus.
- (c) to attempt to relate film as a subject with other subjects which are being studied on the campus and with the fine arts and;
- (d) to expand the understanding of the relationship of the cinema with the needs of individual's growth and social developments.

Twentytwo universities/colleges were selected for the establishment of Film Study Centres during the first phase. A UGC Central Cell is set up at the National Film Archives of India, Pune to ensure constant supply of suitable film classics and ancillary support material and also undertake training and retraining programmes for the teacher coordinators.

4.42 Gandhian Studies:

The Commission continued to support the universities for various programmes of Gandhian studies and values and

strengthening of Gandhi Bhavans. The Commission also continued the approved positions of research associates in Gandhian thought. A Committee has been constituted to advise the Commission on programmes on Gandhian studies. On the recommendations of the Committee, the following proposals were approved during the year:

- a) One post of Deputy Director and Rs.50,000/- grant for the Gandhi Bhawan of Delhi University;
- b) Assistance for the purchase of books, audio-visual material and creation of one post of Professor (Humanism & Science) in respect of Bhagalpur University.
- c) Assistance to Kashmir University for starting Master's Programme in Gandhian thought.

The Committee emphasised that study of the Gandhian thought had not only to be scientific and objective but also critical to ward off dogmatism. The suggestion of the committee to hold a national seminar on Gandhian studies in universities was also agreed to. A preparatory committee was constituted to decide the venue and topics for the seminar.

There are 11 universities which have academic programmes leading to the award of degree/diploma in Gandhian thought. The Commission has desired to review these programmes and a committee has been constituted for the purpose.

4.43 Buddhist Studies:

The Commission has been providing assistance to selected universities on cent per cent basis outside the plan

allocation for the promotion of Buddhist Studies. Assistance is provided mainly for the appointment of Staff and purchase of books with a view to strengthening teaching and research related to Buddhist Studies. On the recommendations made by the Philosophy Panel, the Commission accepted during the year the proposal of Nagarjuna University for the establishment of a Centre of Buddhist Studies. The Gujarat Vidyapith is already being assisted by the Commission for the introduction of Buddhist Studies as an optional subject at the M.A./M.Phil levels as part of courses in Gandhian Studies and Peace Research.

4.44 Value-Oriented Education:

The University Grants Commission has given high priority to value-oriented education. Value orientation, as a major concern of education, has been a subject of discussion from time to time. A conference of Educationists in May, 1981 discussed the theme of value-oriented education at some length. The Conference felt that value orientation should be a focus of education and that teachers should be given necessary training in the effective methods of development of values among students. The conference also felt that the major problems involved in value oriented education at the higher levels are the content, methodology and integration of value oriented education in the total scheme of higher education.

Value orientation has often been considered in the narrow context of imparting moral education. Values, in fact, cover the entire domain of the human personality and its integrated development. Specific values correspond to different capacities; there are values of physical education, aesthetic education, mental education, spiritual education and so on. The imparting of these

values should therefore become an integral part of the teaching-learning process; it cannot be something which is added on to a given curriculum for a specified course. In fact, the entire curriculum of the course lends itself to value-orientation; it is not necessary that imparting of values has to be an additional curriculum load.

Value oriented education also figured in the discussions on the formulation of National Policy on Education. The NPE-1986 points out that the growing concern over the erosion of essential values and an increasing cynicism in society has brought to focus the need for readjustments in the curriculum in order to make education a forceful tool for the cultivation of social and moral values. According to the Policy, value education has a profound positive content, based on our heritage, national goals and universal perceptions. Besides, in our context, education has to foster universal and eternal values oriented towards the unity and integration of the people to eliminate obscurantism, religious fanaticism, violence, superstition and fatalism. The policy also visualises a positive role for education in the development of new values through redesigning curriculum, textbooks, training and orientation of teachers, etc., in the empowerment of women and bringing about changes in their status.

The UGC has sanctioned a project for undertaking studies relating to value oriented education to be implemented at the Gujarat Vidyapeeth, Ahmedabad.

A programme for production of books, films, video-tapes etc. on themes relating to value oriented education is under consideration. Efforts are under way to identify themes as well as authors and producers to undertake this programme.

4.45 Support for publication of Journals in Humanities and Social Sciences:

The University Grants Commission is providing assistance for the publication of journals in humanities and social sciences. The grant is given for the publication of research journals in English or regional language brought out by a department/institute in a particular discipline or on inter-disciplinary basis. The object of the scheme is to help the university/department to improve the quality of their journals and to ensure regularity of their publication.

The grant under this scheme is given to meet the annual deficit subject to a maximum of Rs.5,000/- per year for a period of five years.

4.46 Centres of Advanced Study (CAS), Departments of Special Assistance (DSA) and Departmental Research Support Projects (DRS) in Humanities & Social Sciences

As on 31st March, 1988, 15 departments were participating as Centres of Advanced Study. During the year 1987-88, 33 departments have been invited to participate under the programme of Departments of Special Assistance and 9 departments under the Departmental Research Support. A number of departments of various universities have been identified by the panels for participation under the programme of DSA/DRS. Proposals of these departments were under active consideration of the Commission. A list of the departments participating in the scheme of CAS/DSA/DRS in Humanities and Social Sciences as on 31.3.1988 is given at Appendices-XVII, XVIII and XIX. It will be seen that there were 15 CAS, 58 DSA and 13 DRS in Humanities and Social Sciences as on 31.3.1988.

4.47 Centres of Advanced Study, Departments of Special Assistance and Departmental Research Support Projects in Science Subjects:

As on 31st March, 1988, 26 departments were participating as Centres of Advanced Study, 75 departments as Departments of Special Assistance and 53 under the Departmental Research Support programme. A list of these is given at Appendices XX, XXI and XXII.

4.48 Curriculum Development Centres

It was a long felt need to prepare a model curriculum in different subjects to maintain uniform standards of education in the country. Keeping this objective in view the Commission initiated in 1986 the scheme of Curriculum Development Centres to be set up in different disciplines. The major task of such centres is to undertake thorough review of the existing syllabi and courses of different universities at various levels of higher education and to suggest measures for modernising the same and restructuring them to unit courses, besides developing alternative models emphasising the different aspects of study of the subject concerned.

The main thrust of the proposed curriculum is aimed at shifting emphasis from teaching to learning which is an important element in the new approach to education as laid down by the National Policy on Education (1986). This has necessitated the re-organisation of the curriculum packages possibly in a modular form and greater emphasis to be given to the student's motivation to learning than to teacher's lectures. Further, the curriculum is to be so designed that it would make education socially relevant and more meaningful to the needs of its beneficiaries. Students are

to be given home assignments, tutorial work etc. so that they may make use of library and laboratory facilities.

Also, lectures have to be supplemented by tutorials and problem-solving sessions (which is about 20% of the lecture work-load), term papers, project work and field work which will form a constituent part of the curriculum. Such a curriculum will enable greater mobility of students from one region to another. The curricula are being developed by groups of experts in the concerned subjects. These experts have been selected from different universities, laboratories and other bodies. In case of under-graduate curriculum, the experts have been chosen from colleges as well.

During the year under report, the Commission set up three Curriculum Development Centres (CDCs) in the areas of physics, botany and zoology at Poona, Calcutta and Gujarat university respectively. Thus, as on 31st March, 1988, as many as 27 CDCs had been set up in various subjects. A list of these centres is given at Appendices-XXIII (a) and (b).

The Commission has so far received model curricula in 12 disciplines which are indicated by an asterisk in the list of centres given at Appendices XXIII (a) and (b). These will be discussed by expert committees in the respective subjects and thereafter circulated to universities alongwith the recommendations of the expert committees.

4.49 Major Research Projects (Humanities and Social Sciences):

The Commission provides assistance to teachers, both in service as well as superannuated, in universities and colleges for undertaking research or learned works in their fields of specialisation. Research projects under the scheme may be undertaken by an individual teacher or a

group of teachers or by a department as a whole. Priority is accorded to such topics of research which have an inter-disciplinary approach specially in fields which have hitherto remained neglected but which are of immense value from a socio-economic point of view. Commission's assistance is available for appointment of junior research fellows, research associates, visits for the field work, apparatus, equipment, postage, stationery, computation work, books & journals, printing of questionnaires, contingencies and such other items needed for the project.

During the period under report, the Commission approved 103 major research projects (of which 27 were for retired teachers) in different disciplines of humanities and social sciences involving a cost of Rs. 56.72 lakhs.

4.50 Minor Research Projects (Humanities and Social Sciences):

Under this programme, a university or college teacher intending to undertake a short-term research project or an investigation for a doctoral degree under approved supervision, is provided financial assistance upto a ceiling of Rs. 15,000/- by the Commission. The assistance is available for purchase of books and journals, field work, preparation of questionnaires, computation work, equipment and contingencies which are specifically needed for the proposed project but are not normally available in the institution where the teacher is employed.

During the year under report, the Commission approved 147 minor research projects in humanities and social sciences with an estimated cost of Rs. 12.44 lakhs.

4.51 Major Research Projects (Science, Engineering and Technology):

The Commission is providing financial support/assistance to faculty members in the universities/colleges as well as to the retired teachers to enable them to take up well-defined time-bound research projects in pure and applied sciences and engineering/technology related to national R&D effort or in new fields and inter-disciplinary areas of importance. During the year, the Commission approved 162 projects in science at a cost of Rs. 181.16 lakhs.

On the recommendations of the Engineering and Technology Panel, 5 major research projects were approved in Engineering/Technology with a cost of Rs.8.32 lakhs.

4.52 Minor Research Projects (Science, Engineering and Technology):

During the year, the Commission approved 980 minor research projects in science subjects with a cost of Rs.99.19 lakhs. Also, on the recommendations of the Engineering/Technology panel, seven minor research projects were approved during the year with a cost of Rs.0.89 lakhs.

4.53 Preparation of University level books by Indian Authors:

The Commission has been providing since 1970-71 financial assistance to outstanding academics and scholars in universities, colleges and other institutions of higher learning and research for preparation of high quality books, monographs and reference material for use in the universities and colleges.

The progress of the scheme upto 31st March, 1988 was as under:

(a) Projects initially accepted	:	1034
(b) Projects cancelled due to non-implementation	:	98
(c) Projects where the manuscripts have been completed	:	331
(d) Projects in different stages of implementation	:	605

The operation of the scheme in its present form has been suspended since July 18, 1986 and the scheme is under review. However, the proposals received upto 17th July, 1986 were being considered.

4.54 Examination Reform:

The Commission has been emphasising the implementation of various measures of examination reform with a view to improving the reliability, validity and objectivity of evaluation and with a view to bringing about a closer integration of teaching, learning and evaluation.

Since the close of the Fourth Five Year Plan, the Commission has been laying special emphasis on the implementation of various measures of examination reform. The main emphasis is on the following aspects:

- a) Continuous internal evaluation as a supplement to the present final examination.

- b) Development of question banks in order to eliminate some of the shortcomings of setting up examination papers and as a means for revision and modernisation of courses of study.
- c) Introduction of grade system instead of the marking system in order to increase reliability and bring about better comparability among different subjects.
- d) Introduction of the semester system in order to have greater flexibility.

In addition to the measures listed above, the Commission has desired that all universities and institutions deemed to be universities should implement the following reforms relating to syllabus/question papers and conduct of examinations:

- 1) The syllabus in each paper should be demarcated into well-defined units/areas of content alongwith a topic-wise break-down. The units may be numbered.
- 2) Examiners should be free to repeat questions set in previous examinations. This is necessary in order to ensure that students do not leave out important portions of the syllabus. Instructions to paper-setters should be amended accordingly.
- 3) There is often a very wide choice given to students for answering questions, say 5 out of 10. Such overall choice restricts the area of knowledge with which a student can pass an examination and is, therefore, undesirable. If there is choice, it may be provided by alternate questions in each unit of the syllabus.

- 4) No examination should be held without fulfilling the requirement of a minimum number of lectures/tutorials/laboratory sessions etc. which should be clearly laid down by the university.

The Commission is providing support to a few selected universities/institutions deemed to be universities towards core staff and other facilities such as workshops, seminars, printing of question banks, purchase of books and equipment, contingencies etc. on 100 per cent basis for establishment of Examination Reform Units within an overall ceiling of Rs. One lakh per annum besides actual expenditure on core staff. The grants paid to these universities/institutions have enabled them to introduce specific measures of examination reforms and to monitor the programme. At present, 10 universities and 3 institutions deemed to be universities are receiving assistance from the Commission towards establishment of Examination Reform Units. The scheme of examination reform is presently under review.

SECTION 5

DEVELOPMENT OF UNIVERSITIES

5.01 Development grants are provided by the Commission to the universities which are declared fit under Section 12(B) of the UGC Act in order to facilitate the procurement of such infrastructural facilities as are not normally available to them from the state governments/other bodies supporting them. The Commission generally provides assistance for academic buildings, staff quarters, student hostels, equipment, books & journals and other facilities designed to promote the quality and level of teaching and research as well as to foster corporate life on the campus.

5.02 Assistance to Universities for Approved Plan Posts during the Sixth Plan:

The Commission took a decision during the year that those teaching posts in the universities which were approved by the Commission in the 6th Plan period in the light of the recommendations of the Visiting Committees but which have not been approved by the State Governments may be treated as 7th Plan posts and accordingly a university, if it so desires, may fill up these posts in the 7th plan period. Expenditure involved on this account may be met out of the 7th Plan ceiling of the university for general development. The assistance of the Commission for these posts will, however, be available for a period of five years from 1987-88 to 1991-92 of which the last two years will be treated as assistance under the 8th Plan.

5.03 Additional Allocation Equivalent to Spillover of Sixth Plan
Building Projects:

The Commission at its meeting held in february, 1987 considered the recommendations made by the various committees appointed to examine the 7th Plan development proposals of 80 universities/institutions and resolved as under:

"The Commission took note of the fact that there is a large spill-over of the earlier plan periods and it was agreed that this may be provided to the universities in a phased manner as and when additional resources are made available to the Commission. However, the staff salary component from 1985-1988 (3 year period) will in any case be met out of the 7th Plan ceiling already allocated to the universities."

Accordingly, the Commission has since decided to provide additional allocation to universities equivalent to the spill over of the ongoing building projects from the 6th Plan and earlier plans over and above the 7th Plan allocation. Universities have been requested to utilise this amount towards capital works viz., construction of class rooms, laboratory, library buildings, hostels, staff quarters etc. The State government/University will also have to provide the necessary matching share in accordance with the norms laid down by the Commission for different building projects. Keeping this in view, universities have been requested to send building proposals which they would like to undertake against the additional provision in the current plan.

5.04 Additional Allocations to Universities and Colleges for Development of Libraries during Seventh Plan:

The Commission at its meeting held in November, 1987 decided that the universities, deemed to be universities and colleges be provided additional allocation for libraries during the 7th plan period beginning from 1987-88 over and above the normal development grants as per norms given below:

- | | |
|---|------------------|
| 1. Universities/deemed to be Universities with ceiling of normal development grant of Rs.100 lakhs and above. | Rs.10 lakhs each |
| 2. Universities/deemed to be universities with ceiling below Rs.100 lakhs | Rs.7 lakhs each |
| 3. Colleges | Rs.25,000 each |

5.05 Special Assistance to Universities for Equipment:

In view of the emphasis laid in the National Policy on Education (1986) on removal of obsolescence and consolidation of equipment in universities and colleges, the Commission at its meeting held in January 1988 accepted the criteria worked out by the office of the Commission on the basis of the data collected from universities and agreed to provide assistance to universities and colleges for removal of obsolescence and consolidation of equipment

during 1987-88. For this purpose, universities were grouped into three categories as detailed below:

I. (i)	Science Departments Category	Amount Sanctioned (in Rupees)
	A	30 lakhs
	B	25 lakhs
	C	20 lakhs
(ii)	Humanities and Social Science Departments	
	A	10 lakhs
	B	7 lakhs
	C	5 lakhs
II.	Colleges:	
	UG Programmes only	2 lakhs
	PG Programmes only	5 lakhs
	UG/PG Programmes	7 lakhs

The grants have already been allocated to the universities on the pattern indicated above.

For the college sector, however, a detailed scheme is being worked out.

5.06 Revised Pattern of Assistance for Construction of Library Buildings:

The Commission at its meeting held in January, 1988 reviewed the pattern of assistance for providing grants for construction of library buildings and agreed that the present pattern of providing 50% by the UGC as its share

may be raised to 75%. This is applicable in the case of both universities and colleges.

5.07 Campus Development in Central Universities and Institutions deemed to be Universities:

The Commission continued to provide assistance for campus development of central universities and institutions deemed to be universities in accordance with the guidelines laid down in 1984-85. During the year 1987-88, grants amounting to Rs.179.51 lakhs were paid by the Commission for campus development.

5.08 Grants under Plan Development Schemes to Medical Colleges and Hospitals of Central Universities:

The Commission continued to provide grants under plan development schemes to Aligarh Muslim University, Banaras Hindu University and Delhi University for medical education. The 7th Plan development proposals of the medical faculties of the AMU and BHU and the University College of Medical Sciences, Delhi University were examined by an expert committee and schemes involving a total allocation of Rs.724 lakhs were approved by the Committee for the 7th Plan period 1985-90. Against this allocation, the Commission released during 1987-88 grants to the tune of Rs.118.53 lakhs for medical colleges and Rs.46.31 lakhs for the attached hospitals of the universities mentioned above. University-wise breakup of the total allocation for

the 7th Plan and the grants released during 1987-88 is given in Table 5.1 below:-

Table 5.1

University	Allocation for 7th Plan (Rs. in lakhs)	Grants released 1987-88	
		Medical Colleges	Hospitals
Aligarh Muslim University	263	13.03	46.31
Banaras Hindu University	261	65.50	- -
University College of Medical Sciences (Delhi University)	200	40.00	- -
Total	724	118.53	46.31

5.09 Sub-plan for the Development Schemes of the Central Universities:

The Commission is making separate allocation under the Sub-Plan for the development of central universities, medical colleges of central universities and hospitals attached to them and the Delhi colleges buildings under the annual budget of the UGC. During the year 1987-88, grants released to the central universities for various schemes

under the Sub-Plan amounted to Rs.1835.76 lakhs as per details given below:-

Table 5.2

Scheme	Grants released during 1987-88 (Rupees in lakhs)
General Development in Humanities and Social Sciences	203.64
General Development in Sciences	296.48
Medical Colleges	118.53
Hospitals	46.31
Campus Development	175.22
Delhi Colleges Buildings	167.33
New Central Universities	190.00
Faculty Housing Guest House	63.52
Students Hostels	94.55
Miscellaneous	480.18
	<hr/> 1835.76 <hr/>

The maintenance expenditure of the medical colleges at the Aligarh Muslim University and the Banaras Hindu University and the attached hospitals was met out of

Block grants of the university, whereas in the case of College of Medical Sciences, Delhi University, the maintenance grant was paid directly to the institution.

5.10 Grants for the Development of Science:

Grants given to the universities for science education and research during 1983-84 to 1987-88 are shown in Table 5.3.

5.11 Grants for the Development of Humanities and Social Sciences:

Grants paid to the universities during 1983-84 to 1987-88 for the development of humanities and social sciences are indicated in Table 5.4.

5.12 Three year Degree Course in Physical Education, Health Education and Sports in Universities and Multi-Faculty colleges:

The Commission has agreed to the introduction of a three year degree course in Physical Education, Health Education and Sports in universities and multi faculty colleges. In the initial stages, only one college in each district having the basic minimum facilities viz., track and field, gymnastic, yoga, conditioning unit etc. will be selected for the introduction of the course. Universities/colleges were advsed to send proposals for the introduction of the course. During the year 1987-88, proposals of 11 universities and 22 colleges were approved by the Commission for starting the course. A list of these universities/colleges is given at Appendix XXV.

Table-5.3

GRANTS FOR THE DEVELOPMENT OF SCIENCE

Sl. No.	Item of Expenditure	1983-84	%	1984-85	%	1985-86	%	1986-87	%	1987-88	%	Total
1.	Staff	35.99	2	88.62	6	76.24	4	148.58	8	265.19	13	614.62
2.	Equipment	894.36	46	357.29	25	330.57	17	312.90	16	124.25	6	2019.37
3.	Books & Journals	354.74	18	145.12	10	141.84	7	109.50	6	91.26	5	842.46
4.	Buildings	51.98	3	88.68	6	105.40	5	233.04	12	84.44	4	563.54
5.	Centres of Advanced Study*	24.96	1	176.03	12	271.85	14	106.99	5	89.85	5	669.68
6.	Special Assistance to selected departments	590.34	30	224.22	15	442.02	22	193.90	10	325.56	16	1776.04
7.	Nuclear Science Centres	-	-	-	-	393.00	20	456.00	23	529.60	26	1378.60
8.	Other Schemes**	11.76	-	378.00	26	221.99	11	398.61	20	515.08	25	1525.44
Total***		1964.13	100	1457.96	100	1982.91	100	1959.52	100	2025.23	100	9389.75

* Including staff, buildings, books, equipment etc.

** Includes from 1984-85 projects support, departmental/Institutional Support, Career awards, research scientists, meritorious scholarships for B.Sc. students and other miscellaneous schemes.

*** Includes payment made by adjustment.

Note: A statement showing grants paid to universities during 1987-88 (major Head-wise) under Plan and Section III is given in Appendix-XXIV.

Table-5.4

GRANTS FOR THE DEVELOPMENT OF HUMANITIES AND SOCIAL SCIENCES

Sl. No.	Item of Expenditure	1983-84	%	1984-85	%	1985-86	%	1986-87	%	1987-88	%	Total
1.	Staff	45.31	6	103.05	15	120.80	14	207.20	19	342.84	27	819.20
2.	Equipment	200.44	25	83.16	12	129.33	15	240.19	22	193.17	15	846.29
3.	Buildings	35.03	4	209.29	30	187.48	22	199.17	18	273.87	22	904.84
4.	Books & Journals	404.01	51	138.78	19	242.00	29	227.39	21	153.25	12	1165.43
5.	Centres of Advanced Study*	29.46	4	24.71	4	13.05	2	35.87	3	14.13	1	117.22
6.	Special Assistance to selected departments	47.25	6	51.07	7	63.42	2	57.65	5	97.93	8	317.32
7.	Area Studies	5.16	1	11.38	1	12.32	1	20.06	2	51.28	4	100.20
8.	Other Schemes**	20.45	3	82.91	12	74.69	9	113.91	10	146.57	11	438.53
Total***		787.11	100	704.35	100	843.09	100	1101.44	100	1273.04	100	4709.03

* Including staff, buildings, books, equipment etc.

** Includes from 1984-85 projects support, research scientists, departmental/Institutional support, Career awards, and other miscellaneous schemes.

*** Includes payment made by adjustment.

5.13 Development of Engineering & Technology:

The Commission has been providing financial assistance to university maintained institutions in engineering and technology for the development of higher education and research. As many as 35 university maintained institutions were provided assistance by the Commission during 1987-88.

The Commission is also providing financial assistance for the award of PG Scholarships/Senior Research Fellowships in engineering & technology.

During the year 1987-88, the Commission released grants amounting to Rs.1328.63 lakhs to various University maintained institutions for the purpose.

5.14 Management Courses:

The Commission has also been providing financial assistance to universities/institutions for conducting M.B.A. courses. There were 35 universities/institutions which were being assisted by the Commission as on 31st March, 1988 and an amount of Rs.165.40 lakhs was released for the purpose during 1987-88. This amount is a part of the overall grant of Rs.1328.63 lakhs released for the development of engineering/technology as mentioned in para 5.13 above.

5.15 Development of Computer Facilities and Computer Education for Manpower Training:

The Commission has been providing financial assistance to universities for creating computer facilities and for establishing computer centres. 99 Universities were

covered under the scheme for installation of computer systems.

Assistance is also being provided by the Commission to a number of colleges for installation of personal computers (P.C.) under the scheme of Restructuring of Courses. The Commission has also decided to provide PC/XT computers to 200 selected colleges during the 7th Plan period. To begin with, 100 colleges have been selected for the purpose and PC/XT computers with stabilised and AC Unit have been provided to these colleges. In order to make up the shortage of trained manpower in this field, the Commission, under the UGC-DOE Joint programme, has also been assisting universities for running different manpower training courses viz., (a) one-year Diploma course in Computer Application (DCA) (b) 3-year Master of Computer Applilcation (MCA) course (c) B.Tech and M.Tech courses in Computer Science.

5.16 Jubilee Grants:

The Commission continued to provide assistance during the Seventh Plan to universities and institutions deemed to be universities on the occasion of their Golden/Diamond Jubilee celebrations on the same terms and conditions as in the Sixth Plan. During 1987-88, grants to the tune of Rs.17.12 lakhs were provided for the purpose.

5.17 Unassigned Grants:

The Commission places 'Unassigned Grants' at the disposal of the universities to enable them to meet the cost of approved travel by university teachers as well as for exchange of teachers. As mentioned in the Annual Report for 1986-87, "unassigned grants" are given on the basis of the revised guidelines circulated to universities during

1986-87. Grants amounting to Rs.46.58 lakhs were released under the scheme during 1987-88.

5.18 Publication of Learned/Research Work including Doctoral Theses:

The Commission had been providing assistance to universities under the scheme of Publication of learned/research work including doctoral thesis. It has since been decided that the limit of honorarium payable to the experts for evaluating Ph.D. thesis/learned research work be raised from Rs.100 to Rs.200 per work/thesis to each of the experts upto a maximum of two experts as per the guidelines laid down by the Commission for the purpose.

5.19 Committee on Defence/Strategic Studies:

The Commission had some time back constituted a Committee to evaluate the extent to which the recommendations of the Candeth Committee for introduction of academic courses in Military Science/Defence Studies at the undergraduate and postgraduate levels have been effective and to evolve a mechanism for further strengthening of teaching and research programmes in Defence/Strategic studies in the universities. The Commission at its meeting held in January, 1988 considered the report submitted by the Committee and desired that the undergraduate programmes in Defence Study should be phased out. The Commission further desired that the report may be sent to the universities and other bodies for wider discussions as a working paper in seminars etc. and that the comments of the Vice-Chancellors may be obtained subsequently. Accordingly, the report of the Committee has been sent to the Vice-Chancellors for their comments.

5.20 Development of Sports Infrastructure in Universities and Colleges :

The Ministry of Human Resource Development, Department of Youth Affairs and Sports (DYAS), Government of India revised the pattern of assistance for development of sports infrastructure in universities and colleges in early 1987. It was decided by the DYAS that so far as universities and colleges were concerned, assistance to these institutions under the NSO * Programme would flow through the UGC. In pursuance of this, the Commission formulated guidelines for the development of sports infrastructure and circulated these to universities and colleges with a request that they may formulate and send their proposals in accordance with the guidelines. Proposals so received from the universities were discussed by the Commission with the Vice-Chancellors/representatives of the Universities concerned. The representatives of the Department of Youth Affairs, State Governments, Sports Authority of India and the Association of Indian Universities were also associated in these deliberations. As a result, proposals of as many as 51 universities were approved involving a financial implication of Rs.931.68 lakhs (Rs.759.80 lakhs under NSO programme and Rs.171.88 lakhs under Plan funds of the UGC for Central Universities and Institutions deemed to be Universities).

As regards assistance to colleges, it was decided by the Commission that, depending on the availability of funds from the DYAS, Government of India, to begin with, colleges may be provided assistance for (i) development of play

* National Sports Organisation

fields and (ii) purchase of sports equipment of a non-expendible nature on the following pattern:

	Development of play - fields ----- (75% : 25%)	Sports Equipment ----- (100 % basis)
i. Colleges having enrolment below 2000 at the undergraduate and post graduate levels.	Rs.25,000/-	Rs.5,000/-
ii. Colleges having enrolment of 2000 and above at the undergraduate and postgraduate levels.	Rs.50,000/-	Rs.25,000/-

5.21 Development of Performing Arts:

The Commission has been supporting selected departments of Performing and Visual Arts in the Universities for special assistance. As on 31.3.1988, the following university departments were participating under the programme:-

Name of the Department -----	Name of the University -----
1. Department of Fine Arts	Rabindra Bharati, Calcutta
2. Department of Performing Arts	SNDT Women's University, Bombay.
3. Department of Music, Dance and Drama	M.S. University of Baroda, Baroda
4. Department of Music	University of Madras
5. Department of Theatre	Calicut University, Calicut

- | | |
|---|------------------------------|
| 6. Department of Performing and Visual Arts | Visva Bharati, Shantiniketan |
| 7. Department of Music | Delhi University, Delhi |
| 8. Department of Performing Arts | Rajasthan University, Jaipur |

5.22 Museums:

The Commission has been supporting the museums run by the University departments. As on 31.3. 1988, the following university/college museums were being assisted:

- | | |
|-------------------------|---|
| 1. A.P. Singh | 14. Calicut |
| 2. Utkal | 15. Panjab |
| 3. Garhwal | 16. Guru Nanak Dev |
| 4. Bhopal | 17. Hyderabad |
| 5. Berhampur | 18. Sambalpur |
| 6. Mysore | 19. Marathwada |
| 7. Magadh | 20. M.S. University of Baroda |
| 8. Shiva ji | 21. Mangalore |
| 9. Tamil | 22. Bhagalpur |
| 10. Gujarat Vidyapith | 23. Kumaun |
| 11. Sri Venkateswara | 24. Govt. College for Women, Patiala. |
| 12. Maharshi Dayanand | 25. M.E.S. Kalladi College, Mannanghat. |
| 13. Sri Krishnadevaraya | |

5.23 Centre for Third World Studies.

The Commission has decided to assist the proposal received from the Jamia Millia Islamia for setting up a Centre for Socio-Economic Studies of the Third World countries. The assistance will be for a period of five years which includes assistance for staff, space, seminars,

contingencies, books and journals. The main objectives of the Centre are :

- a. to promote research studies in strategies of planning and socio economic development in developing countries.
- b. to investigate and document case studies of economic and social development.
- c. to examine institutional infrastructure set up for the planning and development process.
- d. to develop alternative models of development suited for the environmental conditions in different countries.
- e. to organise international seminars, workshops etc. to study socio-economic development in developing countries.

5.24 Centre for Scientific Socialism :

The Commission has agreed to support a proposal submitted by the Nagarjuna University for assistance towards the Centre for Scientific Socialism. Based on the recommendations made by an expert Committee, it has been agreed to provide assistance for items such as teaching staff, research staff, books and journals, seminars, conferences, publication, additional space, contingency etc.

The main recommendations of the expert committee are as under:

- a. The programme to be undertaken by the centre should not be confused with area study programme or limited to a

study of socialist countries. It should emphasise on both theoretical and practical aspects of scientific socialism. In fact the studies undertaken by the Centre should be critical in nature and certainly not be intended to simply justify existing system. Socio economic, cultural and scientific dimensions should also be studied side by side with the political or philosophical. Hence, the academics from different disciplines should be drawn into the activity of the Centre.

- b. The University may set up an Advisory Committee of experts in related disciplines from the same university/ neighbouring universities and two experts from outside the region and this committee should meet as frequently as necessary to chalk out the various activities that may be undertaken and also to monitor the progress of work every year.
- c. The activities undertaken by the Centre have to be reviewed at the end of three years and further assistance by the Commission may be provided on the basis of the review.

5.25 Centre for Vedic Studies & Tagore Cell:

The Department of Sanskrit, Rabindra Bharati University, Calcutta has been selected for carrying out research on Vedic Studies. Similarly, the Department of Bengali of this University was identified for the establishment of a Tagore Cell.

5.26 Special Education to Teachers for Teaching Handicapped Children:

The Commission in the year 1983 accepted the recommendations made by the Panel on Teacher Education

with regard to the assistance to be provided to the universities/institutions for offering courses in Special Education for teachers teaching handicapped children and desired that the proposals received from the universities/institutions may be considered at an early date. Accordingly, the Commission has selected two more universities during the year 1987-88 which are offering courses related to Special Education as given below:

S.No.	Name of University/ Institution	Courses offered
1.	Andhra University, Waltair	B.Ed. (Special Education) and M.Ed. (Special Education) for integrated education for visually disabled children.
2.	Kurukshetra University, Kurukshetra	- do -

The Commission is already providing assistance for the purpose to six institutions/universities approved before 1987-88.

SECTION 6

DEVELOPMENT OF COLLEGES

6.01 The guidelines laid down by the Commission for development of colleges for undergraduate and postgraduate education in the 7th Plan were circulated to universities and colleges last year. These guidelines have been reviewed during 1987-88 and the following relaxations have been agreed to by the Commission for purpose of eligibility for assistance:

(a) Postgraduate Departments:

A department may subscribe to atleast three standard academic journals instead of five as laid down earlier in the guidelines.

(b) Undergraduate Departments:

i) The ceiling of 40 per cent allocation for buildings would be generally applicable. But, if a special case is made for lecture rooms and library buildings, it may be relaxed upto 55 per cent.

ii) For women's colleges, the number of permanent teachers which is one of the eligibility conditions, has been reduced to eight as against ten as specified earlier in the guidelines.

(c) Extension of teacher fellowships approved in the 6th Plan period:

Teachers deputed for M.Phil./Ph.D. under the Faculty Improvement Programme are eligible to avail of a total

period of four years including one year for M.Phil and, most of the time, this period spills over the respective plan period. It has been decided to treat this expenditure as an additional grant.

6.02 New Model of an Affiliating University:

The Commission has felt the need for a new approach to the structure of the university system to meet the needs of colleges in the country with regard to curriculum development, examination reform, teachers' training, extension services etc. With this end in view, the Commission constituted a Committee to study various aspects of a new model of an affiliating university and to lay down suitable guidelines for the purpose. The new model seeks to concentrate on the development of the colleges only with a view to promoting excellence in standards of education in the colleges including the autonomous colleges. The Committee has since submitted its report which is under consideration of the Commission.

6.03 Guidelines for Granting Affiliation to New Colleges:

It was mentioned in the Annual Report for 1986-87 that, as part of the measures taken by the Commission to implement various provisions of the New Education Policy, a Committee had been appointed to formulate guidelines for granting affiliation to new colleges by universities. The Commission at its meeting held in September, 1987 accepted the guidelines on terms and conditions of affiliation of colleges by a university as framed by the Committee. These guidelines were sent to the universities and state governments for necessary action.

6.04 College Development Councils:

On the basis of the revised guidelines circulated to the Universities in 1985-86, the scheme of College Development Councils was extended upto 31st March, 1990 on the condition that the state governments would take over the responsibility thereafter. Grants amounting to Rs.8.39 lakhs were released under the scheme during 1987-88.

6.05 Grants paid for General Development:

Grants paid to colleges for general development and other schemes during the period 1983-84 to 1987-88 are detailed in table 6.1 below:

Table 6.1

Grants paid to Colleges for General Development and other Schemes*

Sl. No. Name of the Scheme	1983-84	1984-85	1985-86	1986-87	1987-88
1. Development of affiliated colleges	1,237.67	1,778.59	1,159.28	2670.39 #	2808.58#
2. College Science Improvement Programme	26.03	22.52	50.15**	40.00**	56.00**
3. College Humanities & Social Sciences Improvement Programme.	80.39	87.87	76.91	189.97**	161.15**
4. Centenary Grants	-	0.50	1.75	20.57	50.00

Includes assistance to UG/PG Colleges, Teacher's Training Colleges and Basic Assistance.

* A statement of development grants to colleges(Statewise) is given in Appendix XXVI.

** includes ULP also

6.06 Autonomous Colleges:

Guidelines for autonomous colleges were revised during 1986-87 and, as a follow up, the Commission gave its concurrence to the proposals of 48 colleges during the year for granting autonomous status as recommended by the universities and consented by the state governments. Thus, by the close of the year under report, the number of autonomous colleges in the country was 68 with state-wise position as follows: Andhra Pradesh (11), Gujarat (1), Madhya Pradesh (12), Rajasthan (4) and Tamil Nadu (40).

The Colleges which were conferred autonomous status prior to the National Policy on Education (1986) were advised to seek assistance on the basis of the revised guidelines laid down by the Commission.

The following efforts were made during the year to extend the coverage of autonomous colleges:

- i. Assistance was provided for a number of seminars organised at universities and through the NIEPA to create awareness;
- ii. Dialogue was continued with state governments to amend the Acts of the universities to enable them to allow autonomy to colleges;
- iii. It was stressed upon the universities to expedite formulation of statutes to regulate conferment of autonomous status on colleges and expedite examination of proposals by the Standing Committee.
- iv. The details of the scheme were brought home at various forums viz. at meetings of the CABE and conferences of the State Education Secretaries.

A committee has been set up for advising and monitoring the implementation of the scheme.

6.07 Autonomous Departments:

The Committee constituted by the Commission to suggest a scheme on the functioning of a department as an autonomous unit within the university set-up prepared a draft report which was sent for views/suggestions of different universities. The replies received will be considered by the Committee before finalisation of the report.

6.08 Plan assistance to Delhi Colleges:

Plan assistance provided to Delhi colleges during the year 1987-88 was as follows:

- (a) An amount of Rs.8.77 lakhs was provided to 38 colleges for the implementation of the scheme of 'Restructuring of Undergraduate Courses'.
- (b) An amount of Rs. 6.45 lakhs was provided to six Delhi Colleges under the Scheme of 'Basic Assistance' as per details given below:

Books and Journals	: 2.12 lakhs
Equipment	: 4.33 lakhs

- (c) An amount of Rs.74.36 lakhs was provided under the scheme of 'Development of Undergraduate Education' for books and journals, equipment and buildings as per details given below:

Books and Journals	: 23.54 lakhs
Equipment	: 46.22 lakhs
Buildings	: 4.60 lakhs

- (d) An amount of Rs.165.82 lakhs was provided to 13 colleges for construction/extension of buildings and other specific purposes.
- (e) An amount of Rs.2.47 lakhs was provided to 17 colleges for meeting 50 per cent of the expenditure incurred by the teachers towards international air passage, TA/DA and other purposes for attending international Conferences/Seminars/Symposia abroad.
- (f) An amount of Rs.11.50 lakhs was provided to 46 colleges under the 'Special Library Assistance Scheme'.

SECTION - 7

DEVELOPMENT OF INSTITUTIONS DEEMED TO BE UNIVERSITIES

7.01 Section 3 of the UGC Act provides for declaring an institution of higher education, other than a university, as an 'institution deemed to be university' which is having more specific and limited functions and scope and is doing work of a high standard in an academic field. An institution deemed to be a university enjoys the academic status and privileges of a university and is generally expected to aim at strengthening its activities in its field of specialisation rather than make efforts towards growing into multi-faculty university of the general type.

7.02 During the year 1987-88, three institutions viz. (a) Tilak Maharashtra Vidyapith, Pune (b) Rashtriya Sanskrit Vidyapith, Tirupati and (c) Shri Lal Bahadur Shastri Rashtriya Vidyapith, New Delhi were granted the status of 'deemed universities', thus raising the total number of such institutions in the country to 22 as on 31.3.1988. A list of these institutions giving their enrolment, year of establishment and the year of their recognition as 'institutions deemed to be universities' is given in Table 7.1 below:

Table 7.1

Sl. No.	Name of the Institution	Year of Establishment	Year during which recognised	Enrolment during 1987-88
1	2	3	4	5
1.	Indian Institute of Science (Bangalore)	1909	1958	490

1	2	3	4	5
2.	Indian Agricultural Research Institute (New Delhi)	1905	1958	636
3.	Gurukul Kangri Vishwa- vidyalaya (Hardwar)	1900	1962	333
4.	Jamia Millia Islamia (New Delhi)	1920	1962	3911
5.	Gujarat Vidyapith (Ahmedabad)	1920	1963	856
6.	Tata Institute of Social Sciences (Bombay)	1936	1964	279
7.	Birla Institute of Technology and Science (Pilani)	1964	1964	2466
8.	Central Institute of English and Foreign Languages (Hyderabad)	1958	1973	1324 *
9.	Indian School of Mines (Dhanbad)	1926	1967	306
10.	Gandhigram Rural Institute (Gandhigram)	1956	1976	855
11.	School of Planning and Architecture (New Delhi)	1959	1979	555
12.	Dayalbagh Educational Institute (Agra)	1973	1981	905*

1	2	3	4	5
13.	Sri Sathya Sai Institute of Higher Learning (Prasanthi Nilayam)	1981	1981	677
14.	Banasthali Vidyapith (Banasthali)	1935	1983	1437
15.	Indian Veterinary Research Institute (Izatnagar)	1913	1983	107
16.	International Institute for Population Science (Bombay)	1956	1985	55
17.	Thapar Institute of Engg. and Technology (Patiala)	1956	1985	859
18.	Birla Institute of Technology, Mesra(Ranchi)	1955	1986	1568
19.	Rajasthan Vidyapith (Udaipur)	1937	1987	1492*
20.	Tilak Maharashtra Vidyapith (Pune)	1921	1987	2537
21.	Rashtriya Sanskrit Vidyapith (Tirupati)	NA	1987	NA
22.	Shri Lal Bahadur Shastri Rashtriya Vidyapith (New Delhi)	NA	1987	NA

* Pertains to 1986-87

7.03 MAINTENANCE GRANTS:

The quantum of grants paid to institutions deemed to be universities during 1983-84 to 1987-88 is given in Table 7.2 below:

Table 7.2

	1983-84	1984-85	1985-86	1986-87	1987-88
	(Grants paid in lakhs of Rupees)				
Institutions deemed to be Universities	1037.98	1290.50	1614.25	1954.03	2490.00
		26.12*	97.89*		

* By adjustment

7.04 MAJOR ACHIEVEMENTS:

Major achievements and programmes of the deemed universities as reported by them during 1987-88 are given below:

a. Central Institute of English and Foreign Languages (CIEFL):

- i) The Institute introduced a variety of innovative, need-based programmes during the year to bring about a qualitative improvement in the teaching and learning of English, French, German, Russian and Arabic. The department of Spanish was started during the year under report and a six month Certificate of Proficiency (part-time) course in Spanish was started from September, 1987.

- ii) The Institute is one of the few universities in the country which has set up an Educational Media Research Centre (EMRC) which has been assigned the task of producing a variety of educational programmes. As many as 62 Programmes were produced and sent for telecast during the year 1987-88. The total number of programmes produced was 141 till the end of 1987-88.
- iii) The institute set up a Curriculum Development Centre during the year. Major tasks of the Centre are to:
- a) examine the existing curricula at the undergraduate and postgraduate levels in terms of their quality and workload;
 - b) evolve new curricula at both the levels;
 - c) recommend textual materials where they are available or suggest ways and means of preparing them where they are not available;
 - d) suggest methods and modes of teaching English with the help of the new curricula;
 - e) indicate methods of testing and evaluation for the success of the new curricula; and
 - f) suggest how teachers should be trained so as to implement the new curricula properly.
- iv) A 3-week need-based, specifically targetted, training programme was organised at the Institute in July, 1987. The aim was to train 30 senior teachers (PGT and TGT) of Kendriya Vidyalaya Sangathan from different parts of the country. Similarly, a 12-week training programme for resource persons was conducted

Institute during the year. Thirtythree participants from eleven States attended the programme. Members of the CIEFL faculty were involved in training these participants.

- v) District centres already set up by the institute are meant to provide saturation level training to the teachers of English at the secondary level, to serve as resource centres for library and audio-visual facilities and provide non-formal instruction to adult learners, school dropouts and children from the weaker sections of the society. Upto the end of 1987-88, 330 persons were trained by the institute to man these centres. The total number of District Centres working upto the end of 1987-88 was 21.
- vi) The Regional Centre of the institute at Shillong conducted the following programmes during the period under report:
 - a) A refresher course for school teachers of English from Arunachal Pradesh which was attended by 16 teachers deputed by the Directorate of Education, Government of Arunachal Pradesh, Itanagar.
 - b) A five day workshop-cum-course on syllabi, converting a given syllabus into practical courses for the college teachers of English from Meghalaya.
- vii) The Regional Centre, Lucknow conducted the following programmes during the year:
 - a) an introductory course in Phonetics and Spoken English;

- b) a refresher course in stylistics and the Teaching of Literature;
- c) a refresher course in Phonetics and Spoken English for college teachers;
- d) a refresher course in English for school and Intermediate College teachers and;
- e) a refresher course for college teachers.

viii) The institute reinforced its five-year course in 'English by Radio' by producing a set of printed materials to accompany the broadcasts. This course was broadcast nationwide by 25 major stations of the All-India Radio.

ix) The Institute produced a variety of text-books, supplementary reading materials, research monographs and research journals, and also assisted NCERT, CBSE, SCERT, State Governments and Universities in producing ~~new~~ types of teaching and testing materials.

The institute has been assigned the role of a nodal agency in respect of English and foreign languages.

(b) Dayalbagh Educational Institute

i) The institute introduced the following new courses from the academic session 1987-88:

- a) M.Sc. Mathematics with specialisation in computer applications
- (b) M.A. in Drawing and Painting
- (c) M.A. in Sanskrit and Sanskriti
- and (d) P.G. diploma in Computer Science & Applications.

In addition, research programme (Ph.D.) was also introduced in the post-graduate courses mentioned above.

- ii) In conformity with the National Education Policy (1986), new projects have been taken up under the NAEP, NSS and CDRT units of the institute. Activities undertaken under the NAEP programme specifically aim at improving the standard of living of nearby villagers by developing their educational and vocational efficiency. During 1987-88, 1819 adult learners benefitted from the programme.
- iii) Many staff members participated in various national/international conferences/seminars/workshops. The Choir Group of the institute was selected for participation in the Festival of India held at various centres in the USSR.
- iv) A number of research papers were published by faculty members in prominent national/international journals.

(c) Gandhigram Rural Institute:

- i) The institute introduced the following new courses during the year under report: (a) M.Sc. Applied Physics; (b) P.G. Diploma in Bio-gas and Renewable Energy and (c) Diploma in Khadi and Handloom Technology.
- ii) The following courses were restructured during the year:
 - a) M.A. (Rural Development)
 - b) M.Sc. (Applied Chemistry)
 - c) M.A. (Co-operative Management)

- d) Bachelor of Development Administration (B.D.A.)
- e) Diploma in Agriculture
- f) M.Phil (Micro-level Planning)
- g) M.Phil (Gandhian Thought & Peace Science)

iii) Interaction with the society and the neighbourhood was sought to be strengthened during the year by carrying out:

- a) planned visits to villages through extension channels
- b) interaction with neighbouring schools and colleges to develop curriculum.
- c) interaction with local rural institutions like the Mahalir Mandram, Youth Club, Village Peace Committee etc. in order to enlist people's participation in service and developmental activities.
- d) consultancy services to voluntary organisations, Co-operatives, village panchayats and other rural organisations and
- e) annual meetings with Panchyat Officials, District Officials, DRDAs, BDOs, etc. and assistance in implementation of rural development programmes at the village level.

iv) The following steps for the reform of the examination system were taken during the period under report:

- a) An instruction Manual for the students was brought out by the Examination Reform Unit so that each

student gets an exposure to the rules and regulations on the conduct of examinations.

- b) An Attendance and Assessment Record Book to be maintained by every teacher was also brought out so as to ensure that record of proper maintenance of attendance for students, classes taken, number of tests conducted, extension activities carried out, practicals done, periodical assessment marks given etc. is maintained.
- v) In order to support the activities of Population Education Clubs at the village community level, Mahila Mandals and Youth Club/Youth Sports Centres were organised.
- vi) Village camps were organised by the Centre for Adult, Continuing Education and Extension in villages of Nilakkottai and Batlagundu Panchayat Unions with the objective of identifying the illiterate population and their socio-economic conditions.
- vii) The lab-to-land programme of the institute has been introduced in five villages and improved smokeless chulas have been installed in all the houses in Rangabanur village.
- viii) Under its innovative programmes, the institute has taken the following steps:
 - a) NADEP way of producing compost with the help of farm wastes was taken up and demonstrated to students as well as to farmers in the neighbouring villages.

- b) Processing of a novel food mix called maltomix made out of locally available food stuff were successfully carried out.
- c) A device for reducing drudgery on cleaning smoke pipe in chulas was designed and successfully experimented.
- ix) The institute organised many academic conferences, seminars and workshops and the faculty members of the institute published many papers/articles in Indian journals.

(d) Tata Institute of Social Sciences:

- i) The institute introduced a new course called the PM 34 Information Management System during 1987-88. Besides, seven new courses were offered under interdisciplinary programmes of teaching and research during the year.
- ii) The PM 24 Management Information System was restructured during the year.
- iii) A pre-school and creche were started during the year for taking care of the children of working mothers. The institute is already maintaining a Child Guidance Clinic at the Wadia Hospital where guidance is given to parents and children having various problems.
- iv) The institute is planning to conduct a mobile training programme to reach out to the social workers and para professional staff of health centres and angan wadis in villages.

- v) The Student Service Cell, set up last year, proposed to introduce a job assistance scheme for the outgoing students. The Cell was set up to promote special interests of the students belonging to the scheduled caste/tribe communities and those from other categories whose educational experience places them at a disadvantage with regard to the medium of instruction and other academic requirements.
- vi) The institute organised a number of seminars/conferences/symposia and workshops during the period under report. The faculty members published many papers/articles on scientific and technical subjects in learned journals and also published some monographs/books.

(e) Birla Institute of Technology and Science:

- 1) The institute has made quantum jump in various fields of education, particularly in university-industry linkage, non-formal system of education, management of innovation, educational consultancy etc.
- ii) During the period under report, the institute started a four-year integrated Master of Vocational Studies (M.V.S.) degree programme at the post 10+2 level. Under this programme, courses are offered in functional areas like Information Management, Computer Operations and Applications, Human Potential, Rural Development and Paramedical Services which have been identified on the basis of current and future manpower requirements. To begin with, admissions have been made in the first two of the five identified areas mentioned. Formal teaching at the institute is judiciously interspersed with non-formal, distance learning and cooperative education methods taking

advantage of the experience with practice school so as to enrich and orient the educational content.

- iii) The institute also started during the year a new degree called B.S. (Bachelor of Science), nominally a 4-year integrated first degree at post 10+2 level, to be operated entirely under the non-formal distance learning programmes. Demand for such programmes have been made by the employing world from the CSIR, the Andhra Pradesh & Maharashtra Governments, etc. This new degree would be the vehicle for teaching the present 18 first degrees of the formal system in future for student-centred distance learning arrangements. As the need arises, new programmes may be created within this group of degrees. For these distant learning programmes, new technology is being used that includes audio-video methods and information technology.
- iv) The institute undertook a thorough review of most of its academic programmes and courses during the year with a view to enrich the programme content, include newer frontiers of knowledge, increase use of computer in course work, rationalize manpower utilization and remove operational bottle-necks. As a result, a number of new courses were introduced in Computer Science, Instrumentation, Mathematics, Physics, STD and English disciplines as well as in the elective categories. Course description for some of the courses were also changed.
- v) New inter-disciplinary programmes in "Electronics & Control" and "Systems & Information" were started leading to one-year M.E. degree in addition to the already existing M.E. courses in Chemical, Civil, Computer, Electrical & Electronics and Mechanical.

vi) Under its Course Development Scheme, the institute has done pioneering work by producing distance learning course material in science and technology areas, mathematics, technological operations etc. for the newly started Distance Learning Programmes (DLP). Supplementary material like tutorials on floppy discs to be used with personal computers was also prepared. For the formal on-campus programmes also, about 70 lecture notes have been produced so far, out of which many have already been published.

vii) The All India University Youth Academic Week, APOGEE'87, was held during the year in which nearly 150 papers were presented by students. Of these, nearly 60 papers were presented by student-participants from other universities. About half a dozen experts invited from various fields delivered lectures.

viii) Many exhibitions and workshops were organised by the institute in different areas including Robotics, Artificial Intelligence, Astronomy, etc.

(f) Gurukul Kangri Vishwavidyalaya:

i) The institute introduced a three-month certificate course in Proficiency in English during the year.

ii) Courses of study for introduction at the graduate level under +3 pattern of education have been restructured and introduced from 1987-88. Syllabi of other courses have also been modernised.

iii) Rural development programmes were undertaken by the students and staff in nearby villages. Programmes of interaction with the weaker sections of the society

were undertaken by the N.S.I. Unit of the Vishwavidyalaya.

- iv) Central evaluation system of answer script has been introduced and semester/credit system has also been introduced at the P.G. level.
- v) A Committee to consider the implementation of various measures of examination reforms as recommended by the AIU/UGC was constituted during the year.
- vi) Many teachers of the institute participated in the national conferences/seminars and published papers/articles in learned journals & monographs.

(g) Indian Institute of Science:

- i) In response to the ever growing demand for developing human resources in Computer Science and Engineering, the institute has designed an 8-Module Intensive Programme in Computer Science and Engineering. The first 6 modules have already been conducted. These modules have been well received by the participants.
- ii) A special research programme 'Condensed Matter Studies' in the Instrumentation and Service Unit was also introduced during the period under report.
- iii) The Curriculum Development Cell of the institute has provided financial assistance for the preparation of 70 manuscripts of text books out of which 20 have already been published. The Cell also took up the production of video tapes during the year and produced the following lectures:
 - a) Fifth Generation Computer System.

- b) Technology for the Fifth Generation Computer System.
 - c) Superconductivity - Basic Phenomena.
 - d) Superconductivity - Materials and Applications.
- iv) The Mathematics Olympiad test was held in December 1987 at six centres in Karnataka. More than 450 students selected by 110 schools all over Karnataka took part in this test.
- v) The Centre for Scientific and Industrial Consultancy proposed 138 projects worth over Rs.100 lakhs out of which 106 projects valued at Rs.65 lakhs were initiated during 1987-88. In addition, tests worth Rs.3 lakhs were also taken up by the Departments/Centres of the institute through CSIC.
- vi) Under Community Services and Extension Programmes, 20 diploma holders in engineering have been trained by ASTRA to organise and supervise stove building in various districts.
- vii) A wood gasifier has been developed which can generate electric power to the tune of 5.0 to 7.0 KW, using a dual-fuel engine. It can also be used for pumping water. Pilot dissemination of the gasifier-engine system is now in progress and about 10 systems are operating in the field. One such system has been deployed to provide lighting to an unelectrified village in Kunigal Taluk.
- viii) The pressed soil block technology developed by ASTRA is now being widely disseminated in rural and urban areas of South India. The soil block machine ASTRAM is now available in the market. More than 20 buildings have come up in the four southern states

using this technology. HUDCO is actively sponsoring the soil-cement block technology for mass housing.

- ix) The institute has recognised the post-B.Sc. degree programmes and a few M.E. programmes in tune with the changes in the scientific and technological scenario.
- x) Over 200 members of the faculty participated in symposia, conferences, seminars and workshops held at national and international levels.
- xi) About 650 papers were published on scientific and technical subjects in learned national/international journals. Writing books under the UGC Text Book Writing Scheme is being actively pursued by the faculty.

(h) Banasthali Vidyapith

- i) The Vidyapith introduced the following new courses
 - a) Three-year Master of Computer Application;
 - b) M.Sc. Home Science Foods and Nutrition and
 - c) M.Sc. Home Science Clothing and Textile.
- ii) In order to promote research in the fields of social Sciences, economics, sociology, political science and history, the Vidyapith also started M.Phil from the session 1987-88.
- iii) Programme pedagogy has been given equal importance alongwith research methodology. The need for M.Phil programme emphasising language teaching for students passing M.A. in Hindi, English and Sanskrit is being increasingly felt and as such an M.Phil programme in English was introduced during the year.

- iv) As many as 1800 adults have been the beneficiaries of the Adult Education Programme introduced by the Vidyapith last year.
- v) Many faculty members participated in academic conferences/seminars and workshops during the period under report and some of them published papers/articles in learned journals and monographs/books.

(i) Sri Sathya Sai Institute of Higher Learning:

- i) Under its innovative programmes, a comprehensive scheme for students consisting of academic and integral items was drawn up and implemented in all the campuses and hostels.
- ii) A national symposium on value-orientation in higher education supported by the AIU and the UGC was conducted at the institute during the year. The symposium took note of the achievements made by the institute in developing core courses which highlight value orientation, blending of science and spirituality, providing interaction between head and heart through self reliance programmes and co-curricular activities, designing awareness and foundation courses and incorporating these as part of the curriculum with credits.
- iii) The students of the institute participated in social services such as community hygiene, cleaning of premises etc. at Prasanthinilayam.
- iv) Papers presented by some of the faculty members at prominent international conferences were accepted.

- v) The important recommendation of the National Policy on Education (1986) that "the curricula and process of education will be enriched by cultural content in as many manifestations as possible" has been implemented by the Institute. The Institute has an operational model in which all curricular and co-curricular activities, including integral items and self-reliance programmes, during almost all days of the year, are pointed directly towards the achievements of academic excellence combined with intuitive development.

7.05 Grants paid to Institutions deemed to be Universities: A statement indicating the grants paid to institutions deemed to be universities during 1987-88 under Non-Plan and Plan is given in Table 7.3 below:

Table 7.3

	Non-Plan	Plan	Total
	(Rupees in lakhs)		
1. Banasthali Vidyapith	-	23.16	23.16
2. Birla Institute of Technology and Science	-	34.63	34.63
3. Central Institute of English and Foreign Languages	171.82	53.64	225.46
4. Dayal Bagh Educational Institute	20.62	55.52	76.14
5. Gandhigram Rural Institute	111.30	27.67	138.97
6. Gujarat Vidyapith	116.55	49.07	165.62
7. Gurukul Kangri Vishwavidyalaya	69.40	18.48	87.88

8. Indian Agricultural Research Institute	0.22	0.10	0.32
9. Indian Institute of Science	1315.55	339.44	1654.99
10. Indian School of Mines	314.26	47.75	362.01
11. Indian Veterinary Research Institute		0.30	0.30
12. Jamia Millia Islamia	304.19	188.21	492.40
13. School of Planning and Architecture	-	1.08	1.08
14. Sri Sathya Sai Institute of Higher Learning	-	46.71	46.71
15. Tata Institute of Social Sciences	113.54	39.85	153.39
16. Thapar Institute of Engineering and Technology	2.80	22.19	24.99
17. Birla Institute of Technology, Mesra, Ranchi.	-	24.25	24.25
18. Sh. Lal Bahadur Shastri Rashtriya Sanskrit Vidyapith, New Delhi.	0.01	-	0.01
19. Rajasthan Vidyapith	-	0.58	0.58
Total:	2540.26	972.63	3512.89

SECTION-8

NON-PLAN GRANTS TO UNIVERSITIES

8.01 The maintenance grants are paid to the central universities in terms of the statutory provision under section 12(b) of the UGC Act to meet recurring expenditure of all faculties on items such as salaries of staff (both teaching and non-teaching), maintenance of laboratories, libraries, buildings etc. In the case of Aligarh Muslim University and the Banaras Hindu University, such grants are also given for the maintenance of hospitals attached to the medical colleges of these universities.

In addition, non-plan grants are paid both to the central, as well as State Universities for specific purposes subject to the agreed levels of expenditure. Non-plan grants include grants for scholarships and fellowships under engineering and technology, teacher fellowships, national fellowships, national associateships, national lectures, junior research fellowships and research associateships. These also include grants for fellowships and awards reimbursed to non-university institutions (like the IITs, PG Institute of Medical Education & Research, NCERT etc.) as decided by the Government of India. Non-plan grants paid under various schemes during 1987-88 are given in Table 8.1 below:

Table 8.1
Statement of non-plan grants paid under various schemes
during 1987-88

S.No.	Purpose	Amount
		(Rs. in lakhs)
1.	Maintenance grants to Universities	10403.67
2.	Maintenance grants to Institutions deemed to be Universities	2490.00

S.No.	Purpose	Amount
3.	Maintenance grants to Anna and Roorkee Universities for specific purposes	80.05
4.	Maintenance grants to Constituent/ Affiliated Colleges of Delhi University	3986.21
5.	Maintenance grants to Constituent/ Affiliated Colleges of B.H.U.	6.32
6.	House Building Advance to Institutions deemed to be universities and central Universities.	271.50
7.	Teacher Award for schemes like Teacher Fellowship, National Fellowship/Associateship, National Lectures, Retired Teachers, Emeritus Fellowship etc.	35.86
8.	Research Fellowships/Associateships	361.14
9.	Scholarships/Fellowships under Engg. & Tech.	110.28
10.	Grants to non-university Institutions	6.77

		17751.80*

* This does not include Rs.308.83 lakhs released towards UGC administration charges, pay of officers, establishment etc.

3.02 Non-plan Grants to Central Universities:

Grants paid by the Commission towards the maintenance of central universities for the years 1983-84 to 1987-88 are indicated in Table 8.2. It will be seen that the

quantum of grants paid year after year has been increasing. During 1987-88, grants amounting to Rs. 10403.67 lakhs were released towards maintenance of the central universities.

Table 8.2

S.No.	University	1983-84	1984-85	1985-86	1986-87	1987-88
1.	Aligarh Muslim University	1322.25	1496.85	1621.37	1888.62	2540.05
2.	Banaras Hindu University	1790.58	2188.93	2479.45	2811.65	3366.15
3.	Delhi University	983.33	1060.49	1166.31	1427.02	1655.82
4.	Hyderabad University	173.42	206.87	297.36	361.08	423.75
5.	Jawahar Lal Nehru University	495.83	523.32	621.43	735.27	952.20
6.	North Eastern Hill University	176.75	188.82	549.20	669.85	752.60
7.	Visva Bharati	387.58	409.09	485.59	521.11	713.10
Total:		5329.74	6074.37	7220.71	8414.60	10403.67

8.03 Cadre Review in Central Universities:

The Commission continued to provide its assistance to the Central Universities to remove disparities in scales of pay, designations etc. Though the pay scales of the non-teaching and technical staff had been rationalised into 13 core scales of pay, it was observed that still there were issues to be resolved in the Central Universities for

the support services. The Commission accordingly appointed a committee including Vice-Chancellors of the Central Universities and others to study the remaining problems of non-teaching and technical staff and make recommendations to the Commission so that the non-technical and administrative services could really function as a strong back-up support for the teaching and research programmes in the Central Universities.

During the year under report the Commission also forwarded its recommendations to the Government of India regarding the revised pay scales of officers in the Central Universities such as Registrars, Deputy Registrars and Assistant Registrars as also their equivalence.

8.04 Maintenance Grants to Central Universities, Institutions
Deemed to be Universities and State Universities:

In compliance with the observations made by the Public Accounts Committee in its 73rd Report, a statement showing maintenance grants (Non-Plan) in respect of Central Universities, institutions deemed to be universities and such of the State Universities which have furnished the information for the year 1985-86 is given in Appendix-XXVII.

SECTION-9

FACULTY IMPROVEMENT PROGRAMME

9.01 The Commission attaches great importance to faculty improvement and provides opportunities to teachers to keep in touch with the modern developments in their fields of study and research and to exchange ideas with experts in their subject areas and related fields. The focus of the programme centres around improving the professional competence of teachers to make them better equipped so that they can offer high quality instructional programmes and thus maintain high standards. With these objectives in view the Commission has been providing financial assistance to universities and colleges to enable them to improve their faculty through various programmes/schemes. A resume of these programmes supported by the Commission during 1987-88 is given below:

9.02 Seminars, Symposia, Refresher Courses, Workshops etc.

The Commission continued to provide financial assistance to universities and colleges for organising seminars, symposia, refresher courses, workshops etc. in accordance with approved norms. The number of proposals accepted during 1987-88 under these programmes was 423 as per details given in table 9.1 below:

Table 9.1

**Proposals for Seminars, Symposia, Workshops,
Refresher Courses accepted during 1987-88**

Sl. No.	Programme	Humanities & Social Sciences	Sciences	Total
1.	Seminars	166	71	237
2.	Symposia	17	60	77
3.	Workshops	33	53	86
4.	Refresher Courses	4	5	9
5.	Short-term Institutes	7	7	14
Total:		227	196	423

In addition to the programmes organised by universities and colleges, the Commission also provided TA/DA to university & college teachers to participate in similar activities organised by non-university institutions.

9.03 Conferences:

The Commission provides a token contribution to universities and colleges for organisation of conferences at the state, regional, all-India and international levels. The purpose of these conferences is to provide an opportunity to faculty members and researchers to discuss their research findings. The number of conferences at

various levels for which the Commission provided token contribution during 1987-88 was as follows:-

State level	8
Regional level	14
All-India level	130
International level	10

Total	162

9.04 Strengthening the Teaching of English Language:

The Commission has been providing financial assistance to universities for organising specialised Summer Institutes for English Language Teaching (ELT) in collaboration with the British Council and the Central Institute of English & Foreign Languages, Hyderabad. Eight universities organised such institutes during 1986-87. After evaluation of the programmes conducted by these universities by the UGC - ELT Advisory Committee it was decided that these universities may organise similar Institutes during 1987-88 as follows:

<u>Coverage</u>	<u>University/Venue</u>
B.Ed. college teachers	Department of Education, Delhi University.
For Agricultural Science, Engg. & Technological Institutions	M.S. University of Baroda

For teachers of affiliated colleges

Lucknow University
Gauhati University
Sardar Patel University
Madras University
Meerut University
Kashmir University

The British Council provided experts for these seminars while the Central Institute of English and Foreign Languages, Hyderabad organised pre-institute workshops for the resource persons. Of the eight universities indicated above, Gauhati and Kashmir universities could not organise the programme during the year.

9.05 Academic Staff Orientation Scheme:

In the course of implementation of various provisions of the National Policy on Education (1986) and the Programme of Action, the Commission formulated a scheme called Academic Staff Orientation Scheme for orientation of newly appointed lecturers in universities and colleges. The scheme is meant to enable the teacher to:

- (a) understand the significance of education in general, and higher education in particular, in the global and Indian contexts;
- (b) understand the linkages between education and economic and socio-cultural developments with particular reference to the Indian polity where secularism and egalitarianism are the basic tenets of society;
- (c) understand his/her role in the national goal of achieving a secular and egalitarian society;

- (d) acquire and improve basic skills of teaching at the college/university level;
- (e) be aware of the developments in his specific subject;
- (f) understand the organization and management of a college/university and to perceive the role of a teacher in the total system;
- (g) utilize opportunities for development of personality, initiative and creativity.

With the above objectives in view, a curriculum for the Academic Staff Orientation Course was drawn up by a committee of experts with the following components:

- (a) Awareness of linkages between Society, Environment, Development and Education.
- (b) Philosophy of Education, Indian Education, Indian Education System and Pedagogy.
- (c) Subject Upgradation
- (d) Management and Personality Development

The Commission, at its meeting held in April 1987, generally endorsed the scheme and desired that the course content should be flexible enough so that universities could modify courses to suit their local requirements. The courses are to be multidisciplinary in nature and teachers from different disciplines will undergo orientation at a time. The entire scheme will have two phases. In phase I, orientation course will be organised for newly appointed lecturers while in Phase II subject

oriented refresher courses for existing teachers will be conducted.

Phase I : Orientation courses for newly appointed teachers:

To begin with, 48 universities were identified by the commission to establish Academic Staff Colleges for conducting orientation courses for newly appointed lecturers in universities and colleges from the academic session 1987-88. As there was no known model of the orientation scheme, some Vice-chancellors were invited to a meeting held to consider the modalities of the scheme and other related problems. It was decided that, in the first instance, a model course content for the Academic Staff Colleges may be evolved. For this purpose, four regional workshops were organised at the following universities with a view to having wider inter-action with the academic community so as to evolve an appropriate model for the academic contents of the training programme and also to decide the catchment area of each staff college:

- i. Andhra University, Waltair.
- ii. Dr. H.S. Gaur Vishwavidyalaya, Sagar
- iii. Madras University, Madras
- iv. Panjab University, Chandigarh

The reports of these workshops as also the UGC document "Academic Staff Orientation Scheme" were considered at the national workshop organised at Bombay University in August, 1987.

The Scheme was finally approved by the Commission in September, 1987. Universities were accordingly informed that the Academic Staff College (ASC) will be a separate

entity as a UGC sponsored project and it will be an inter-university institute catering to the needs of a number of colleges and universities in the state/neighbouring states. It was decided that each ASC may organise eight orientation courses of four weeks duration in one module during a year and the number of participants may be 40 representing different disciplines at a time. The catchment area of each ASC was determined keeping in view the geographic proximity, responsibility of a university as an affiliating institution and the national outlook. Each ASC was required to enrol 85-90 per cent of teachers from within the catchment area and the remaining 10-15 per cent of teachers from outside the state on an all India basis. The Commission will provide 100 per cent assistance for the Academic Staff Colleges till the end of the 7th Plan i.e. till 31st March, 1990.

Universities were requested to set up ASCs on the lines indicated above and, in Phase I, start organising orientation courses for the newly appointed lecturers from the academic session 1987-88.

Grants amounting to Rs.2.53 crores were sanctioned to 34 universities during 1987-88. By 31st March, 1988, as many as 31 of these universities had become functional, 45 orientation courses had been organised and about 2,500 teachers had been given orientation. The remaining universities were requested to take necessary steps for starting such courses without delay. It is expected that all the identified ASCs will become functional during 1988-89.

Phase II : Refresher courses for in-service teachers:

It was decided that in Phase II, the Academic Staff Colleges will act as a nodal agency for conducting

subject-oriented refresher courses for in-service teachers either by themselves or at some selected university departments/ institutions which have achieved excellence in broad disciplines. It is envisaged that the universities/ institutions so identified will start organising refresher courses during 1988-89.

9.06 National Fellowships:

The scheme of National Fellowships provides an opportunity to teachers of outstanding eminence to take a year or two off from their normal duties to devote themselves exclusively to research and writing the results of their study. Under the scheme, 30 fellowships are available at any point of time. The teachers who are awarded this fellowship receive their normal salary, allowances and fellowship allowance of Rs.500/- per month in addition to a non-lapseable grant of Rs.5,000/- per year for secretarial assistance, travel and contingent expenditure. During 1987-88, the Commission awarded national fellowship to three teachers.

9.07 Visiting Associateships:

The scheme (formerly called the National Associateship scheme) was initiated by the Commission in 1971-72 with the aim of assisting outstanding university/college teachers, generally below 35 years of age and engaged in research, to visit and work for short periods (not exceeding three months at a time) at other university centres/research institutions/national laboratories which have special facilities relevant to their respective fields of work. The amount of the award available under the scheme from 1.4.1987 is Rs.1200/- p.m. in cases where accommodation is provided by the host institution and Rs.2000/- p.m. in cases where accommodation is not provided. Three kinds of

Associateships are available viz. for one year, three years, and five years respectively and the number of slots available is 100, 150 and 150 respectively. The position of awards utilised for each category during 1987-88 was as follows:

One year award	21
Three year award	26
Five year award	15

9.08 National Lectures:

This programme enables outstanding teachers and research scholars to visit universities/colleges for delivering a series of lectures in their fields of specialisation and to participate in academic programmes of the host institutions. The Commission provides to the identified teacher an honorarium of Rs.1500/- and a grant of Rs.250/- for preparing necessary materials for delivering lectures and preparation of teaching aids in addition to travel expenses. Local hospitality is provided by the host institution. The procedure for selection under the scheme was revised during the year. According to the revised procedure, names of teachers for the award are to be suggested by the subject panels only and not by inviting nominations through the universities/suggestions from subject panels and from among previous year's awardees as was done earlier. No award could be made under the scheme during 1987-88 as the procedure for selection was under revision and recommendations of the subject panels were still not finalised.

9.09 Guest/Part-Time Teachers

Guest/Part-time teachers are appointed by the universities and colleges in exceptional circumstances in such

specialised fields/subjects where professional expertise is required to strengthen and supplement teaching as also in cases where the work-load does not justify the appointment of a full-time regular teacher throughout the academic year. During the year, the Commission revised the guidelines for appointment of guest/part time teachers on the recommendations of an expert committee appointed for the purpose. The revised guidelines, which will come into effect from 1.4.1988, were circulated to the universities. These guidelines are given at appendix XXVIII. As per these guidelines, the honorarium payable to guest/part teachers in universities and colleges has been enhanced as under w.e.f. 1.4. 1988:

Existing Norms		Revised Norms	
-----	-----	-----	-----
Workload per week	Honorarium per month	Workload per week	Honorarium per month
-----	-----	-----	-----
3-6 hours	Rs.500/-	4-6 hours	Rs.1000/-
7-10 hours	Rs.750/-	7-10 hours	Rs.1500/-

9.10 Emeritus Fellowships:

The scheme initiated by the Commission in 1983 is intended to utilise the services of highly qualified and experienced superannuated Professors in universities upto the age of 65 years, who have been actively engaged in research and teaching improvement programmes of the Commission in the preceding years, to enable them to pursue active research in their fields of specialisation as also to help the Commission monitor its educational programmes. The total number of such fellowships at any given time is limited to 25. The awardee gets the fellowship amount in addition to his usual superannuation benefits. The amount of fellowship available under the scheme has been raised

from Rs.2,000/- p.m. to Rs.4,000/- p.m. and the amount of non-lapseable contingent grant from Rs.6,000/- p.a. to Rs.10,000/- p.a. for secretarial assistance, travel, stationery, postage, telephone rent, consumables etc. effective from 1.4.1988. Additional financial support could also be provided to enable the fellow to pursue his research and academic activities on the merits of each case. During 1987-88, 14 scholars were working under the scheme.

9.11 Visiting Professors/Visiting Fellows:

The Commission continued to provide assistance to Universities for appointment of Visiting Professors/Visiting Fellows. On the recommendations of an expert committee, the Commission has since revised the honorarium payable to visiting Professors from Rs.3000/- p.m. to Rs.5000/- p.m. Similarly, in the case of Visiting fellows, payment of daily allowance has been raised from Rs.100 to Rs.200. The revised rates in both cases are effective from 1.4.1988.

9.12 Participation of retired teachers in research projects:

The Commission has been providing honorarium to superannuated teachers participating in approved research projects as principal investigators. On the recommendations of an expert committee, the Commission has since raised the honorarium payable to retired teachers from Rs.1500/- p.m. to Rs.2000/- p.m. The Commission also agreed that a retired teacher should teach four to six hours a week in addition to his research/project work for which he should attend the university/college during normal working hours.

9.13 Career Awards:

The Commission initiated the scheme of Career Awards to young scientists in the year 1979-80. The purpose of the scheme is to identify young talented teachers in science/engineering subjects and in humanities and social sciences having proven ability of research in their areas of specialization with a view to promote their research career by enabling them to devote their efforts and energies early in their career for research and study with minimum teaching responsibilities. These awards are generally given to lecturers/readers who are not more than 40 years of age. The number of annual awards given under the scheme is 35 (20 in Science/Engineering and 15 in Humanities/Social Sciences). The duration of the award is three years. The Commission pays the awardees their full salary and allowances. In addition, the Commission provides each awardee a research grant upto rupees one lakh and two or three research fellows during the tenure of the award. The awardees also participate in teaching programmes of the department. During the year 1987-88, six awards were made in Science/Engineering subjects and 15 in humanities and social sciences.

9.14 Research Scientists:

The UGC initiated the scheme of Research Scientists in 1983-84 with a view to building a cadre of research scientists in Indian Universities to promote high quality research in Science, engineering and technology and humanities including Social Sciences by providing opportunities to persons with outstanding merit and zeal for creative work. The Commission has created 100 positions of Research Scientists in Science and 100 positions in the Humanities and Social Sciences subjects in categories A, B & C corresponding to the grades of

lecturers, readers and professors respectively in the ratio of 60:30:10. The persons to be considered for research scientist positions must have an outstanding academic/research career with a Ph.D. degree and research experience of not less than two years after the award of Ph.D. for research scientist 'A', five years for scientist 'B' and ten years for scientist 'C' respectively. The maximum age for category 'C' has been fixed as 55 years. In addition to the salary, the scientist gets Rs.5000/- p.a. as contingency grant and other allowances as are admissible to university temporary teachers appointed on long term basis. Persons are selected centrally under the scheme for a period of five years. The performance of an awardee is to be assessed and monitored vigorously by the Commission before the five-year period ends. If the research work is found to be of excellent nature, the award could be continued at the same level or the scientist could be even promoted to the next higher level for another contract period and in case the progress is not found satisfactory it could be withdrawn. The decision of the Commission in this regard shall be final. During the period under review the Commission invited applications for the available positions of research scientists in all the categories (A,B & C) for consideration. These were processed and the candidates were short listed for interview. As on 31st March, 1988 the number of research scientists working under categories A and B was 63.

9.15 Travel Grants for Attending Conferences etc.:

The Commission has been providing financial assistance to the extent of 50 per cent to college teachers for attending international academic conferences abroad for presenting papers on the findings of their research work. Grants to the tune of Rs.10.51 lakhs were paid by the

Commission for the purpose during 1987-88. Similar assistance is available for university teachers under the "unassigned grant" given to universities.

9.16 Staff Quarters and Teachers' Hostels:

The Commission has also been providing grants on a limited basis for the construction of staff quarters and teachers' hostels. Grants amounting to Rs.65.09 lakhs were released for the purpose during 1987-88.

9.17 Teacher Fellowships

The Commission initiated the programme of teacher fellowships in order to improve the competence of teachers and the methodology of teaching. The scheme enables the teachers to acquire M.Phil/Ph.D. degree. The teacher fellowships are mainly meant for teachers working in affiliated colleges offering instructions in subjects pertaining to humanities, social sciences and sciences. Professional colleges offering courses of medicine and agricultural engineering are not covered under the scheme. However, teacher fellowship may be awarded to teachers in subjects of basic sciences and humanities working in professional colleges. The Commission is awarding two types of teacher fellowships - short-term and long-term. The duration of the short-term fellowship is one year which can be utilized for pursuing the M.Phil courses. The normal duration of the long-term fellowship is three years and is meant to enable the teachers to conduct research for the award of Ph.D. (including M.Phil, wherever necessary). The tenure of the long-term fellowship can be extended by one year beyond the normal period of three years in special cases.

SECTION-10

STUDENTS

10.01 Over the years the Commission has been giving increasing attention to the well-being of the student community and to the creation of an environment conducive to study, learning and research activities. Efforts of the Commission in this regard have a direct bearing on the maintenance and improvement of standards of higher education in the country. All development programmes of the Commission including appointment of staff, construction of academic buildings, libraries and laboratories, purchase of equipment, books and journals have a direct or indirect bearing on the well-being of the students and/or the promotion of congenial environment and conditions for pursuing academic programmes. Besides, the Commission has also initiated a number of programmes for needy and economically weaker students on the one hand and meritorious students on the other. These include the provision of scholarships and fellowships, hostel facilities etc. Various programmes run by the Commission for the student community are indicated below:

10.02 Lump-Sum Grant to Universities for meeting contingent needs of research scholars:

The Commission continued to provide lump-sum grant to the universities for meeting contingent needs of research scholars who are not in receipt of any fellowship/scholarship. Assistance for this purpose is provided at two levels viz. Rs. 25,000/- for the universities having on an average 100 full-time research scholars during the last three years and Rs. 50,000/- for the universities having more than 100. During 1987-88, a grant of Rs. 4.42 lakhs was paid to universities for this purpose.

10.03 Junior Research Fellowship:

The Commission continued to provide assistance to universities for the implementation of the scheme relating to allocation of Junior Research Fellowships at 'anyone given time basis'.

Since 1984 this award is made only to those who qualify in a national level test conducted by the UGC/CSIR for the purpose.

Junior Research Fellowships are also made available under special assistance programmes like Centre of Advanced Study, Department of Special Assistance, Departmental Research Support Project and Major Research Project.

In order to provide fellowship to all those candidates who had qualified in the national test, 3558 fellowships in all had been allocated to universities under the 'at any one given time basis' scheme. While the universities were requested to make the award on the basis of results announced keeping in view the number of junior research fellowships allocated to an individual university, the Commission also agreed to provide supernumerary/ personal fellowships over and above the allocated quota.

10.04 Research Fellowships for Scheduled Caste/Tribe Students:

Ten per cent of the total number of junior research fellowships available with the universities on 'any one given time basis' are reserved for students belonging to Scheduled Caste/tribe communities. Besides, the Commission is also awarding annually 50 junior research fellowships exclusively to scheduled caste/tribe candidates. The Commission made direct award of 58 junior research

fellowship to scheduled caste/tribe students for the year 1987-88.

10.05 Research Fellowships in Engineering and Technology:

The Commission is awarding 60 research fellowships every year in engineering and technology to enable the students to undertake advanced study and research in their fields of specialization. The awards for 1987-88 were yet to be announced.

10.06 Border Hill Areas Scholarships:

The Commission has instituted 25 scholarships for meritorious postgraduate students belonging to scheduled castes/tribes and backward communities of border hill areas in order to promote the channels of academic communication between students of these regions and the rest of the country.

10.07 Research Associateships

Under the scheme of research associateships, the awards are made by the Commission centrally every year with a view to provide an opportunity to research students and teachers who have shown talent and competence to take up research work independently or on project-assignments in science, humanities including social sciences, and engineering and technology. The total number of awards is 150 annually including five each in Gandhian Studies, Nehru Studies and National Integration. During the year under review, 72 research associates in Science and 54 in humanities and social sciences were selected.

10.08 Research Associateships for Scheduled Caste/Tribe Students:

The Commission centrally awards 40 research associateships to the candidates belonging to scheduled caste/scheduled tribe communities. During the year 1987-88, 14 awards were made under the scheme.

10.09 Research Associateships for Disabled Students:

The Commission has also earmarked 30 research associateships annually for the physically handicapped scholars including the blind, deaf and the mute. During the year 1987-88, 15 awards were made by the Commission.

10.10 Award of Junior Research Fellowships/Research Associateships to the scholars of Developing Countries:

The Commission is providing financial assistance to the talented scholars of developing countries for doing research in Indian universities in science, engineering & technology, humanities and social science subjects. The Commission awards annually 20 junior research fellowships for research leading to M.Phil/Ph.D. and 7 research associateships for doing post-doctoral research, to the scholars of developing countries. During the year under review, the Commission awarded 20 fellowships and 5 associateships.

10.11 Youth and Sports - Implementation of the New Education Policy:

The Commission has been implementing the various provisions of the New Education Policy (1986). In the field of Youth and Sports, the following steps were taken during 1987-88:

- i) A Committee was appointed to examine the feasibility

of allowing such students who are outstanding in sports but are unable to take their examinations at the appointed time due to their participation in sports tournaments or coaching camps, to appear at examinations specially held at a later date.

- ii) State governments and universities were requested to make sure that no college, either general or technical, was allowed to come up without ensuring availability of adequate play-field facilities.
- iii) The Commission received the report of the Committee appointed to prepare a model curriculum for Physical Education. The model curriculum was referred for further examination to a panel on Physical Education appointed by the Commission.
- iv) The Directors of Lakshmibai National College of Physical Education (LNCPE), Gwalior and Netaji Subhash National Institute of Sports (NSNIS), Patiala were requested to indicate the programmes of refresher courses that could be offered by them for the Directors of Physical Education. The LNCPE has since agreed to organise refresher courses and is working out the details of the proposed courses. The NSNIS has, however, volunteered to extend all possible assistance to the LNCPE for the successful implementation of the programme.
- v) The work of the Committee appointed by the Commission to work out the modalities for compulsory participation of students in games, sports and physical education for promotion to higher classes was in progress.

10.12 Student Amenities:

The National Policy on Education (1986) and the Programme of Action stressed the need for providing basic facilities to students in a college/university. In pursuance of this, the Commission requested universities for provision of basic facilities to students, as under:

- i) Glaring deficiencies with regard to student amenities may be made good without delay and an effective machinery be created for removal of students' grievances.
- ii) It may be ensured that students eligible for scholarships and other incentives receive them in time. Appropriate action may be taken against those who are responsible for neglecting this aspect.
- iii) Guidelines laid down by the Education Commission (1964-66) regarding students' unions may be followed. Universities/Colleges must ensure, in cooperation with the students' unions, that union elections do not degenerate into a game of money, power, unseemly behaviour and disfigurement of buildings. Students' unions may be advised to function in a democratic manner and their funds be audited by the university auditors.
- iv) A code of students' discipline may be evolved with the help of students and this may be duly implemented. The code may be incorporated in the statutes of the university. A machinery may be evolved with the help of students' unions so as to effectively implement the code.

- v) It may be ensured that unauthorised persons do not take shelter in students' hostels and strict discipline is enforced in the hostels.

Universities were requested to bring the above mentioned steps to the notice of all the affiliated colleges as well.

10.13 Appointment of Coaches:

The Commission has set up a Committee to examine the question of providing assistance for the deployment of coaches in universities.

10.14 Admission quota for foreign students:

The Commission at its meeting held in September, 1987 considered a reference from the Govt. of India, Ministry of Human Resource Development regarding the need to fix quota for foreign students for admission to various courses and for hostel accommodation in universities and colleges. The Commission decided that the universities and colleges may be advised to provide a minimum of 5 per cent seats for foreign students in admissions to various courses and 10 per cent of the seats in hostels. The above decision of the Commission was brought to the notice of the universities for necessary action.

10.15 Award of Degrees:

The Commission at its meeting held in September, 1987, while taking note of the status report prepared for holding convocations by the universities, desired that a mechanism should be evolved to ensure that degrees are given to the students in time without waiting for formal convocation to take place. The degree recipients may, however, sign exhortation which is carried out during the normal

convocation ceremony. The above decision of the Commission was accordingly brought to the notice of the universities for guidance and necessary action.

10.16 Construction of Hostels:

The Commission has been giving high priority to the construction of hostels for students in universities and colleges. Provision of hostel facilities is one of the important items included in the general programmes of development of universities and colleges.

In the interest of social justice, the Commission has laid down that all universities assisted by it to construct students' hostels would be required to reserve 20 per cent of the seats in such hostels for students belonging to Scheduled Castes and Scheduled Tribes. The Commission has also laid down that its assistance for construction of hostels in backward areas would be 75 per cent of the total expenditure as against 50 per cent available for other areas. The Commission has also been encouraging the construction of dormitories and/or double or triple seated rooms rather than single seated rooms in the hostels in order to keep the per student cost low.

During 1987-88 a grant of Rs.65.18 lakhs was paid to universities and colleges towards the construction of hostels.

SECTION 11

CULTURAL EXCHANGE PROGRAMMES AND INTERNATIONAL COLLABORATION

11.01 Cultural Exchange Programmes:

Programmes of Cultural Exchange are intended to promote cultural, educational and scientific cooperation between India and other countries and are covered under specific agreements between the Government of India and Governments of other countries. Programmes connected with higher education are assigned by the Government of India to the UGC for implementation. These programmes relate generally to exchange of visits of teachers for study-cum-lecture, exchange of views, developing contacts, development of bilateral academic links between institutions in the two countries, organisation of joint seminars, assignment of foreign language teachers and award of scholarships/fellowships. Visits under these programmes normally range from four to twelve weeks. In specific cases, these visits could be for a period of upto six months. In the case of assignment of foreign language teachers and award of fellowships/scholarships, these visits are normally for one academic year. These programmes prove useful to the teachers in keeping themselves abreast of advances made in their fields of specialisation and in exploring possibilities of developing collaborative programmes. During 1987-88, such programmes were being implemented by the Commission with 46 countries. During the year, the Commission hosted the visits of as many as 70 foreign scholars from various countries and arranged their programmes at various institutions in India. The corresponding number of Indian scholars who were deputed abroad under these programmes during the year was 75.

11.02 An important activity on which the Commission laid great stress during the year was the development of bilateral institutional linkages in specific areas between identified departments of universities and institutions of higher education in the two countries. The Commission has not been in favour of comprehensive institutional linkages as these are not considered viable on account of different levels of development of teaching and research of the corresponding departments of the universities. As such, areas of bilateral collaboration have been identified under the Cultural Exchange Programmes with countries like the USSR, FRG, GDR, Bulgaria, Czechoslovakia, Hungary, Poland, France, Yugoslavia, Italy, etc. This programme of bilateral collaboration is reviewed from time to time and additional areas are identified for collaboration. An important development in this respect during the year was the agreement between the University Grants Commission and Yugoslav authorities for the identification of areas of mutual cooperation. The Commission is gradually shifting emphasis in the cultural exchange programmes from the general exchange of scholars to the programmes of developing institutional linkages in specified areas. It is felt that such linkages would strengthen collaboration between India and foreign countries in specified areas. Efforts are also being made to identify areas of possible mutual collaboration with other countries covered under the Cultural Exchange Programmes.

A resume of the various activities included under the Cultural Exchange Programmes for 1987-88 is given in the paragraphs which follow.

11.03 Delegations:

- 1) A delegation of the Ministry of Higher and Specialised Secondary Education of the USSR led by Mr. A. Golubev visited India from 12th September to 23rd September, 1987 and held discussions with the representatives of the UGC for developing cooperation between the USSR and India in the field of higher education.
- ii) On an invitation from the German Democratic Republic, Czechoslovakia, Poland, Hungary and Bulgaria, a delegation led by the Vice-chairman, UGC visited these countries from 7th September, to 10th October, 1987 to study the higher education systems and hold discussions on the development of bilateral collaboration in specific fields and about smooth implementation of the programme.
- iii) A five member delegation led by Prof. S.K. Dasgupta of the Gokhale Institute of Politics and Economics, Pune visited Hungary for taking part in the binational Economic conference held in Budapest from 30th June to 10th July, 1987.

11.04 Foreign Language Teachers:

The Commission continued to provide foreign language teachers in Russian, German, Polish, Serbo-Croatian, Rumanian, Bulgarian, Mongolian, Korean, Vietnamese, Hungarian, Portuguese, Chinese and French language to the universities having a proper infrastructure for teaching the foreign languages concerned as per the provisions of the Cultural Exchange Programme. The Commission, however, feels that foreign language teachers should support the indigenous Indian Staff and not replace them. With this in view, the commission has emphasised that the department in the university should develop a proper infrastructure in the teaching of the foreign language concerned with the help of Indian faculty members. During the year 1987-88, 30 teachers in Russian, 11 in German, 2 in Czech, 10 in French, 3 in Spanish and one each in Polish, Serbo-Croatian, Rumanian, Portuguese, Bulgarian, Mongolian, Korean, Vietnamese, Hungarian, Italian, Pasto and Chinese were assigned to universities in India. The Commission has also forwarded a proposal from the German Academic Exchange Service for providing German language teachers for scientific and technical subjects to universities in India. The Commission has also established a chair of Slavic studies in the name of Madam Lyudmila Zhivkova at Delhi University. A teacher from Bulgaria has been assigned for this chair.

11.05 Fellowships and Scholarships:

The following fellowships/scholarships were offered during 1987-88:

- i) The Commission nominated scholars against the 12 fellowships offered by the German Academic Exchange Service for advanced research in Natural Sciences,

Mathematics, Geology, German Language and literature and some areas in Humanities and Social Sciences. Two of these fellowships are reserved for German Language and Literature. Ten nominations were accepted by the FRG side.

- ii) The German Academic Exchange Service offered six short term fellowships for senior students of M.A. course as well as for students enrolled in M.Phil/M.Litt course at the German departments of Indian Universities. The Commission has utilised 5 placements.
- iii) The Commission nominated teachers and students against the six fellowships and 13 scholarships offered by the French Government for French Language, Literature and Civilisation for 1987-88.

11.06 Academic Link Interchange Scheme:

This programme, which is being implemented in collaboration with the British Council, provides for the development of linkages in specified areas between institutions of higher education in India and the U.K. It involves the exchange of faculty from identified participating institutions for a period not exceeding 20 weeks each. The visits have the following objectives:

- (a) Joint Research
- (b) Joint Publications
- (c) Curriculum and Course Development
- (d) Academic/Professional/Administrative Staff Exchange Development.

Of the 25 areas identified for collaboration, programmes have been mutually agreed to in 12 areas for

implementation. During the year, 17 Indian scholars visited the UK under the programme while the number of British scholars who visited universities in India was 13. The question of taking up collaborative programmes in additional areas identified is under consideration.

11.07 Collection of Source Material for Research Work in UK and other Countries:

The Commission continued to provide travel and maintenance expenses to senior Indian scholars in humanities and social sciences for their visit to UK for a period of 6-8 weeks to enable them to collect material for their research work, which is ordinarily not available in India. The period of 12 man-months available under this programme was almost fully utilised and eight scholars were assisted under this programme during the year.

The Commission continued to provide travel grant to teachers for their visit to foreign countries for collection of material for their research work or to avail offer of a fellowship or assistance from an agency from that country where the scholar has been offered partial or full financial assistance for his maintenance. Thirteen teachers were provided assistance under this scheme during the year.

11.08 Development of Canadian Studies:

Under the scheme the Commission has identified some universities for the development of Canadian Studies in specific disciplines. Although these universities have been identified for a single discipline to start programmes in Canadian Studies, the intention is that in course of time they would develop into multi-disciplinary centres

of Canadian Studies. During 1987-88, a scholar from S.N.D.T. Women's University visited Canada for four months.

It has been agreed with the Shastri Indo-Canadian Institute that there will be an exchange of scholars between the two countries for a period of two man-months per year. The Commission nominated two scholars for a period of two weeks each for visit to Canada to study problems relating to administration of universities. A Canadian Political Scientist also visited India under this programme during the year and had discussions with senior scholars in some universities.

11.09 INDO-US Fellowship Programme:

The Commission continued to award fellowships under this programme. Against 15 fellowships of 10 months each to American scholars for their post-doctoral research work in India, the Commission received nominations for 13 long-term fellowships of 10 months duration and 6 short term fellowships of 2-3 months duration. The Commission has already cleared most of the nominations received from the US side for the year 1988-89. Against 12 fellowships that the Government of India allocates to the UGC every year for the visit of India teachers from universities/colleges and Institutes of Technology for post-doctoral work in USA, the Commission converted five fellowships into 15 short-term visitorships of 13 weeks each during the year and made nominations against the residual seven long term fellowships of 10 months each and 15 short-term visitorships of 13 weeks each.

11.10 CSIR-CNRS (France) Exchange of Scientists Programme:

Under this programme the CSIR allocates 200 man-days for the visit of Indian scientists to France and similarly the UGC allocates 200 man-days to the CNRS for the visit of French scientists to India in connection with their research work. Seven Indian scholars visited France while no French scholar visited India under this programme during the year.

11.11 Commonwealth Academic Staff Fellowships & Scholarships:

Under this programme, the Commission coordinates with the Commonwealth Scholarship Commission in UK and makes nominations for the Commonwealth Staff awards (fellowships and scholarships) to enable promising faculty members in universities and colleges in India to work at universities or other institutions in the UK. These awards are not available in the fields of Medicine and Surgery as Commonwealth Medical awards are available separately. During 1987-88, the Commission recommended 34 scholars for fellowships and 9 for scholarships. Out of these, the Commonwealth Scholarship Commission have finally selected 20 for fellowships and 9 for scholarships.

11.12 Specialised Programmes Organised by International Centres/ Agencies:

The Commission provides one-way air fare to teachers in universities and colleges for participation in summer/ winter schools on specialised courses organised by centres run by international agencies or professional bodies like the British Council. The remaining air fare and living expenses for the duration of the course are to be provided by the organisers of the programme or the institution

where the teacher is working or the State Government or any other agency. During the year, the Commission agreed to provide financial assistance by way of one-way air fare to 12 teachers from universities/colleges.

11.13 Visits Abroad:

In pursuance of the decision taken on recommendation 3.8 contained in the 73rd report of the Public Accounts Committee (Sixth Lok Sabha) on University Grants Commission, the information in respect of the visits abroad of the Chairman, Vice-Chairman and Officers of the Commission during the year 1987-88 is given in Appendix-XXIX.

SECTION - 12

ADULT, CONTINUING AND EXTENSION EDUCATION AND DISTANCE LEARNING

12.01 Eradication of Illiteracy:

(a) Centre - based Approach:

The current involvement of universities in the adult and continuing education activities is the outcome of the recognition of the importance of extension education programme by the University Grants Commission as reflected in the 'Policy Frame' of the Commission (1978).

The policy statement underlined the need for extension activity as an important dimension of higher education equal in importance with teaching and research.

The Government of India launched the National Adult Education Programme (NAEP) on October 2, 1978. It was intended to impart functional literacy with assured follow up and continuing education within a target-oriented and time-bound frame. The Commission also drew up a scheme for involvement of universities and colleges and allocated to universities specific adult education centres. Each centre was expected to enroll upto 30 learners. During the year, the Commission continued to provide financial assistance to universities/colleges for taking up literacy work through centre based approach as per the programme already approved for each of the universities. It was emphasised upon the universities to organise literacy programmes giving priority to women, scheduled castes, scheduled tribes, handicapped and people from the rural, backward and slum areas.

In the context of the National Literacy Mission, the Commission formulated during the year new guidelines on adult and continuing education and extension programmes in universities under which the universities were advised to:

- adopt specific area(s) for organising adult education including mass programme for functional literacy, continuing education, population education and other programmes like legal literacy, consumer education, drug abuse prevention/awareness and community welfare/development programmes as an integrated extension activity;
- prepare micro-level plans after survey of the area proposed to be adopted and identify various needs/ areas which require educational interventions;
- utilize the expertise, infrastructure and facilities available with the university set up and establish linkages with other development agencies and also secure assistance from such agencies for execution of the programmes planned for the area.

The new guidelines are intended to provide a package assistance for all programmes, emphasising attention on women, scheduled castes/tribes and physically handicapped. The National Literacy Mission (NLM) assigns to universities/colleges an important task of covering five lakh people in 1988-89 and six lakh during 1989-90 through 25,000 and 30,000 adult education centres respectively besides involving themselves in the mass programme for functional literacy.

The universities have been advised to provide academic incentives to students who participate in extension

programmes. The new guidelines suggest the provision of incentive to the institutions also based on their performance and achievements under extension programme. The new area based approach is to be implemented from 1988-89. Meanwhile, during the year under report, the Commission continued its assistance to universities/colleges for the adult education programmes already approved for them.

(b) Mass Programme for Functional Literacy (MPFL)

As part of the measures to eradicate illiteracy, a 'Mass Programme for Functional Literacy' (MPFL) was launched from 1st May, 1986 through the university system. The universities were advised to continue and strengthen their involvement in the programme during 1987-88 with a target of involving 3.75 lakh NSS, NCC and other students. The Commission continued to provide assistance for involvement of Non-NSS/NCC students in the programme.

12.02 Continuing Education:

The programme of Continuing Education was started with the objective of disseminating knowledge by giving priority to the less privileged and under-privileged sections of the society. During the year under report 26 Universities and 6 colleges were supported by the Commission for organising different types of programmes in continuing education. Regarding funding the implementation of the programmes of adult education, continuing education, planning forums and population education by the colleges through their affiliating universities, it was decided that the colleges may get the accounts for the grants received by them through their universities audited from the authorized auditors and the accounts so audited should be accepted by the universities. This has been done with

a view to avoid delay in completion of accounts and to expedite release of grants to colleges.

12.03 Planning Forums:

The scheme aims to develop plan consciousness among the educated youth in particular and through them among the general public with a view to create an awareness of the need for planned development of the country among the student community and involve them in national development efforts right from the planning stage. The Commission continued to provide assistance to the universities and colleges for instituting planning forums.

During the year under report, eight universities and eleven colleges were assisted by the Commission for setting up planning forums.

The universities and colleges were requested to report the type of activities undertaken by them and send their suggestions for effective implementation of the scheme. A committee under the Chairmanship of Member (Education), Planning Commission was constituted to examine the suggestions received and suggest strategies for reorientation of the scheme.

12.04 Population Education

Apart from continuing assistance for the activities of the population education clubs set up by the universities, the universities were advised during the year to increase the number of clubs so that grass root level activities are enhanced. The Task Force and the Resource Centres set up under the UNFPA-UGC project to provide support services in population education programmes to universities/colleges

in specified areas in terms of development of curricula, training and extension programmes reported significant progress. During the year under report, the implementation of the UNFPA-UGC project was reviewed through:

- i. periodic meeting of the directors of the resource centres and convenors of the task force;
- ii. on-the spot discussions by the UNFPA representatives, Directors and other staff of the resource centres;
- iii. Project progress review meetings with representatives of UNFPA and the Ministry of Health and Family Welfare;
- iv. Tripartite Progress Review Meetings with representatives of UNFPA, Ministry of Health and Family Welfare and Ministry of Human Resource Development;
- v. National Steering Committee meeting under the Chairmanship of the Education Secretary, Ministry of Human Resource Development;

Instead of six Task Forces, three working groups were constituted on:

- a. Curriculum development and training;
- b. Learning material (Audio-Visual and Print) and
- c. Monitoring, Evaluation and Research Documentation.

The salient features of the implementation of the UGC-UNFPA project are as follows:

i. Curriculum Development:

- a. A workshop on Planning of sample material for teachers and students and curriculum development was organised at Gujarat Vidyapith, Admedabad. The possibility of inclusion of population education in various courses was examined. The Task Force circulated curriculum for foundation course and, as an optional group at the first degree level to all the universities. The Working Group is now involved in preparation of curriculum modules for several target groups.
- b. Some of the resource centres have been able to initiate a review of the syllabi in the universities under their service area so as to cover population education. The Jamia University has attempted restructuring of various units of subjects having an element of population education on modular pattern, indicating contents of each lesson, unit, class activities etc:
- c. Population education was introduced as a foundation course and as an optional paper at the B.Ed. level by many universities;
- d. A diploma course on population education through correspondence has been developed at the universities of Burdwan and Panjab. The Ranchi University has started diploma course in Health and Population Education from the year 1987-88 while the Bhagalpur University is finalizing a proposal in this regard.

ii. Learning Material:

- a. A directory of learning material has been prepared and circulated to all universities by the task force;
- b. A workshop - cum- training programme for preparation of audio-visual aids was organised at Poona University;
- c. The resource centres have developed a large number of posters, charts, slides and video cassettes for propagation of messages on population education.

iii. Training

- a. A national level training programme was organised at the SNDT Women's university on the lines suggested in the source book for training.
- b. The resource centres organised a large number of training programmes on population education as per the source book for adult education functionaries in universities/colleges and the Principals of the colleges under their service area;
- c. A summer institute on population education was organised in Kerala University.

iv. Research

- a. The Task Force circulated a select bibliography on population education and also organised a workshop on methodology and priority areas for research;

- b. Some of the resource centres completed studies on topics like 'students perception to the population education, courses', need based syllabi for population education, 'perception of youth on population education leading to quality of life amongst city youth', and 'fragmentation of land and consequent damage in the context of growing population'.

A number of other studies in related fields are planned by the resource centres.

v. Extension

- a. The facilities with the resource centres were strengthened by providing assistance for the purchase of audio-visual equipment and a vehicle each for efficient working. The Ministry of Health and Family Welfare agreed to provide audio-visual material for use by the university system.
- b. Some of the resource centres issued their own news letters while the working group on monitoring and evaluation continued to publish centrally news letter every quarter.
- c. The resource centres organised different types of extension programmes to create awareness of problems arising due to increase in population.

vi. General

- a. A monitoring instrument for the project was developed by the Task Force;

- b. The Working Group and the Resource Centres were advised to seek participation of representatives of the NCERT, Directors of Adult Education, Government of India and the Ministry of Health And Family Welfare, UNFPA and other related agencies in programme planning for purposes of coordination and securing effective implementation of the programme.
- c. The resource centres at Ranchi University, Gandhigram Rural Institute and the SNDT Women's University were advised to develop special programme thrusts respectively for rural, tribal and women population in particular;
- d. The advice of the National Steering Committee was communicated to the working groups and the resource centres for necessary action as follows:
 - i. to intensify grass-root level activities and extension programmes for mass education;
 - ii. to help through research on various aspects;
 - iii. to devise measures necessary for impact study.

12.05 Coaching Classes for Competitive Examinations for Weaker
Sections amongst Minority Communities

Coaching programmes are meant to prepare students belonging to weaker sections amongst minority communities for various competitive examinations for recruitment to services under the Central and State Governments, public undertakings and also for admission to professional and technical courses.

The main coaching centres are located in universities, while the sub-centres are in colleges. While universities are largely responsible for organising coaching classes for the all-India services as well as State level services, colleges are responsible for organising coaching classes for lower categories of examinations.

The implementation of the scheme was reviewed through an on-the-spot study by a committee. After examining the report of the committee, the guidelines for the scheme were revised during the year. The salient features of the revised guidelines are :

- a. Setting up of Regional Resource Centres for coordination and preparation of study material;
- b. Enhancement of grant;
- c. Proper selection of centres;
- d. Effective mechanism for monitoring and evaluation.

The revised guidelines were circulated to the universities/colleges and proposals were invited. Proposals of 14 universities and 39 colleges were received which were being examined by the sub committee. In the meantime, eight universities and six colleges which were organising the programme earlier were paid grants during the year under report.

12.06 National Integration:

With a view to involving the university system in the promotion of the process of national integration through

its teaching, research and extension programmes, a committee under the Chairmanship of Hon'ble Justice Mr. M.H. Beg was constituted. The committee made a number of recommendations and some of the important recommendations were given in the report for 1986-87. The report of the committee was circulated to universities for comments and to deliberate on it after receiving response through seminars at different levels. Six universities responded and a committee was constituted to make specific recommendations for action at various levels. The committee made the following observations after scrutiny of the report and replies received from universities

- a. Although the number of universities which responded to the report was small, many universities were already implementing some of the recommendations contained in the report in one form or the other;
- b. The universities may share their experiences with other institutions.

The committee classified the recommendations as contained in the report and sought specific para-wise views of the universities.

12.07 Distance Education/Correspondence Courses:

Programmes of distance education/correspondence courses have been instituted by various universities in India to enable a large number of persons with necessary aptitude to acquire further knowledge and improve their professional competence. Distance education/correspondence education is essentially based on the supply of instructional material for home study, but has to be supported and supplemented by personal contact programmes, radio programmes, audio-visual aids etc. The

objectives of the scheme are (a) to meet the increasing demand for education by utilising alternative systems and (b) to bring about equalization of opportunities by providing facilities in backward regions, as also to the weaker sections of the community who have to take up jobs owing to their pecuniary circumstances and for women, many of whom still find it difficult to go to a college as they belong to traditional families and communities.

As many as 35 universities in India conduct distance education/correspondence course programmes. A list of these universities, indicating the courses run by them and enrolment in each course is given at **appendix-XXX**. During the year, the Commission provided assistance towards staff, personal contact programmes, study centres, preparation of lessons and library facilities etc. to seven universities for distance/correspondence education.

The Standing Committee appointed by the Commission on distance education constituted a sub-committee for revision of the existing guidelines with a view to strengthen the programmes.

The Commission, while agreeing to the recommendations of the National Committee on Teachers Education that curriculum for B.Ed. degree essentially requires face to face and regular teaching, decided not to assist any new B.Ed programmes through correspondence courses. The universities having this programme were advised to review

their admission in the context of the following decisions already communicated to them:

- i. It was noted that the backlog of untrained teachers in the schools in most of the states had been cleared and as such there was no need to continue correspondence courses in education.
- ii. If, however, a university still finds it necessary to institute such a course it may be allowed to do so provided it fulfills the minimum requirements and norms such as adequate staff-student ratio, supervised practice, teaching, library and laboratory facilities, home assignments etc.

The decision was conveyed to the State Education Secretaries for information & necessary action.

SECTION - 13

FACILITIES FOR SCHEDULED CASTES AND SCHEDULED TRIBES

- 13.01 The Commission has over the years made special efforts for providing facilities to persons belonging to the scheduled caste and scheduled tribe communities in universities and colleges. These include reservation of seats in various courses offered by universities and colleges, reservation in recruitment for non-teaching posts and posts of lecturers, and reservation of seats in hostels. The Commission has also made provisions of reservation in various scholarships and fellowships awarded by it and initiated a number of schemes for the advancement of persons belonging to these communities. In this connection, it has since been decided to incorporate with immediate effect the following provision in all the approval/sanction letters issued by the Commission to universities and colleges:

"The University/College shall take all possible measures to ensure effective implementation of policies of Government of India relating to SC/ST students and teachers in regard to the UGC Programmes. In the case of non-teaching staff, the policies of the Central Government in respect of Central Universities and of the State Governments in respect of the State Universities shall be implemented."

- 13.02 Reservations in admission to various courses in universities and colleges:

The Commission has requested the universities to reserve 15 per cent of seats for admission in various courses for scheduled caste candidates and 7.5 per cent for students belonging to scheduled tribes with a provision for interchangeability, where necessary. While making the

reservation as above, provision may be made to give concession of 5 per cent marks in the minimum percentage of marks required for admission to any course of study. The universities/colleges have also been requested to make reservation in the appointments to the posts of lecturers and non-teaching posts and also in the provision of seats in hostels.

13.03 Creation of Special Cells in Universities

In view of the importance of the programmes for scheduled castes and scheduled tribes, the Commission has been providing assistance to the universities on cent per cent basis for the creation of special cells in the universities for effective implementation of programmes and provisions for these communities. The Commission has so far accepted proposals of 76 universities and institutions deemed to be universities for setting up of special cells.

13.04 Reservation of Fellowships/Scholarships :

The Commission has allocated 3588 junior research fellowships to the universities on 'any one given time basis.' Ten per cent of these fellowships are reserved for the students belonging to Scheduled Caste and Scheduled Tribe communities. Besides this, 50 junior research fellowships are exclusively awarded to Scheduled Caste and Scheduled Tribe students directly by the UGC.

13.05 Reservation of Research Associateships:

The Commission awards 150 research associateships every year in science, engineering and technology, humanities and social sciences. Out of these 10 per cent have been reserved for scheduled caste and scheduled tribe candidates. Besides this, the Commission has instituted 40 research associateships annually for award to scheduled caste and scheduled tribe candidates exclusively.

13.06 Reservation of Teacher Fellowships:

The Commission has instituted 50 teacher fellowships (20 for Ph.D. and 30 for M.Phil) with a view to providing more opportunities to teachers belonging to scheduled caste and scheduled tribe communities working in affiliated colleges to improve their qualifications. The duration of short term fellowship for pursuing M.Phil course is one year. The normal duration of the long-term teacher fellowship leading to Ph.D. degree is three years (including M.Phil, wherever provided). In special cases extension of the long-term teacher fellowships by one year can be granted.

13.07 Postgraduate scholarships to candidates belonging to scheduled tribes of Border Hill Areas:

The Commission has instituted 25 scholarships for students belonging to scheduled castes/tribes and backward communities of border hill areas for enabling them to undertake postgraduate studies in science, humanities and social sciences.

13.08 Remedial coaching classes:

The Commission has been implementing the scheme of organising remedial coaching classes for students belonging to weaker sections of the society, specially the scheduled castes and scheduled tribes. Such classes may have not more than 20 students who may be put under a teacher.

13.09 Assistance to colleges catering to the needs of Scheduled Caste and Scheduled Tribe Students

The Commission is providing assistance upto Rs.4 lakhs to Colleges having at least 5 permanent teachers excluding the Principal and Physical Training Instructor/Director and a minimum of 100 students in degree and post-degree

courses provided at least 35 of these belong to scheduled caste and scheduled tribe communities. Colleges with larger enrolment are eligible for such a grant if the number of scheduled caste and scheduled tribe students is not less than 20% of the total enrolment in degree and post-degree courses or at least 35 in case of colleges with enrolment upto 175 students.

13.10 Reservations in the UGC Office:

The Commission continued its efforts during the year to give due representation to the reserved categories of Scheduled Castes and Scheduled Tribes and to make good the shortfall wherever existing in the office of the Commission in accordance with the orders issued by the Government of India on the subject.

The following officials belonging to the reserved categories of Scheduled Castes and Scheduled Tribes were appointed/promoted during the year under report:

Sl. No.	Cadre	Appointment made by <u>direct recruitment</u>		<u>Post filled by Promotion</u>	
		Scheduled Caste	Scheduled Tribe	Scheduled Caste	Scheduled Tribe
1.	Personal Assistant	-	-	1	-
2.	Staff Car Driver	1	-	-	-

HIGHER EDUCATION AND WOMEN

14.01 It is a matter of gratification that educational opportunities for women in the sphere of general and professional education at the University level have expanded appreciably in recent years. It is equally satisfying to note that women have responded with alacrity and availed of various opportunities as reflected by the constantly increasing enrolment of women in all faculties and at all levels of education. In response to the needs of the society and the demands of the public and private sectors, there has been re-orientation of women education at the university and college levels. The highly specialised and professional courses offered by universities have no longer remained a prerogative of men as more and more women year after year are found competing for entry to these courses. The ensuing paragraphs give an account of the numerical expansion of women participation in higher education as also efforts made by the Commission for promoting women studies in the universities and colleges.

14.02 Growth of Enrolment:

There has been a remarkable growth in the number of women enrolled in institutions of higher education as shown in Table 14.1.

Table 14.1

NUMBER OF WOMEN FOR HUNDREN MEN

	1950-51	1955-56	1960-61	1965-66	1975-76	1981-82	1982-83	1983-84	1984-85	1985-86*	1986-87*	1987-88*
Total women enrolment (in thousands)	40	84	150	271	595	817	880	940	992	1059	1125	1195
Number of women per hundred men	14	17	23	24	33	38	39	40	41	42	44	46

* Estimated

It will be seen from the table that since 1950-51, enrolment of women has gone up 30 times while the number of women per hundred men has increased more than threefold.

Table 14.2 shows the enrolment of women as a proportion of total enrolment during the period 1979-80 to 1987-88. It will be seen that enrolment of women as percentage of total enrolment increased progressively from 26.0 per cent in 1979-80 to 29.6 per cent in 1985-86, 30.6 per cent in 1986-87 and 31.3 percent in 1987-88. In absolute terms, the number of women enrolled almost doubled during the period.

Table 14.2

Total enrolment and enrolment of Women

Year	Total Enrolment	Women Enrolment	Percentage of women
1979-80	26,48,579	7,89,042	26.0
1980-81	27,52,437	7,48,525	27.2
1981-82	29,52,066	8,16,704	27.7
1982-83	31,33,093	8,80,156	28.1
1983-84	33,07,649	9,40,253	28.4
1984-85	34,04,096	9,92,139	29.1
1985-86*	35,70,897	10,58,612	29.6
1986-87*	36,81,870	11,25,304	30.6
1987-88*	38,14,417	11,95,073	31.3

* Estimated

14.03 Women's Colleges:

Table 14.3 shows the number of colleges meant exclusively for women. This number has gone up by about 39 per cent. over the period 1979-80 to 1987-88. In absolute terms the number increased from 577 in 1979-80 to 802 in 1987-88.

Table 14.3

Women's Colleges

Year	Number of colleges for women only
1979-80	577
1980-81	609
1981-82	624
1982-83	647
1983-84	676
1984-85	712
1985-86	741*
1986-87	771*
1987-88	802*

* Provisional

14.04 State-wise distribution:

Statewise distribution of enrolment of women for the years 1983-84 to 1987-88 is given in Appendix-XXXI. It will be seen that enrolment of women as a percentage of total enrolment has gone up in 1987-88 as compared to 1986-87 in all the States except Haryana. As in the earlier years, Kerala (51.6 per cent) continued to

lead in terms of women enrolment as percentage of its total enrolment in 1987-88 followed by Panjab (46.6%), Delhi (44.6%), Haryana (39.7%) and Meghalaya/Nagaland (39.6%). On the other hand, as before, Bihar remained at the bottom with women enrolment only 15.9 per cent of its total enrolment in 1987-88.

The All-India average of women enrolment as a percentage of total enrolment was 31.3% in 1987-88. As many as 14 States and the Union territory of Delhi had percentage of women enrolment higher than the all-india average. These were Gujarat, Haryana, Jammu & Kashmir, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya/Nagaland, Panjab, Tamil Nadu and West Bengal/Tripura/Sikkim.

14.05 Stage-wise Distribution:

Women enrolment at different stages of study is given in Appendix-XXXII. It will be seen that during the period 1979-80 to 1987-88, enrolment of women as a percentage of total enrolment has been consistently going up at all levels viz., graduate, post-graduate and research levels. For example, at the graduate level, enrolment of women as a percentage of total enrolment increased from 26.0% in 1979-80 to 31.3% in 1987-88. Similarly, at the post-graduate level, the corresponding increase was from 27.1% to 32.7% and at the research level from 24.8% to 34.2%. It also highlights an important trend viz., of increasingly higher enrolment of women particularly at the research level where it accounts for over one third of the total enrolment at that level. Even at the post-graduate level the trend is almost similar though the rate of increase is comparatively slower. Women enrolment at the diploma/certificate level

which was 24.6% of total enrolment at that level in 1987-88 showed a mixed trend, rising in one year and falling in the other, during the period under reference.

14.06 Faculty-wise Distribution:

Faculty-wise distribution of women enrolment given in Appendix-XXXIII shows that women enrolment in each faculty as a percentage of total enrolment in that faculty registered a gradual increase from 1979-80 to 1987-88 except that in some faculties it declined in a stray year so as to rise again the following year. In the faculty of 'others' consisting of Fine Arts / Music etc., however, the trend observed over the period was a mixed one with rising and falling women enrolment as percentage of total enrolment in the faculty. The highest percentage of women enrolment in any faculty was recorded by the faculty of Education with 51.8 per cent of its total enrolment in 1987-88 consisting of women, followed by the faculty of Arts (42.7 percent), 'others' (41.8%), Science (32.2%), Medicine (31.1%) and Commerce (20.2%). It is interesting to note that even in the faculty of Engineering/Technology, women enrolment as a percentage of total enrolment has consistently gone up from 3.7 percent in 1979-80 to 6.2 per cent in 1987-88 thus indicating a healthy trend of more and more women opting for non-traditional professional courses.

14.07 Promotion of Women's Studies in Universities:

With a view to strengthening the programmes relating to women's education, the Commission has been providing financial assistance to universities for undertaking well-defined projects for research in women's studies and also for the development of curriculum at the

undergraduate and postgraduate levels and relevant extension activities. Assistance for developing curriculum at the undergraduate level was provided to seven universities as reported in the annual report for the year 1986-87. During 1987-88, 26 research projects relating to the themes of women's studies were approved for assistance. Also, during the year, the Standing Committee on Women Studies, after examining various proposals, recommended assistance to the following universities and colleges to set up centres/cells for women's studies.

Women's Studies Centres

1. Rani Durgawati Vishwavidyalaya, Jabalpur
2. Rajasthan University, Jaipur
3. Berhampur University, Berhampur
4. Nagarjuna University, Guntur
5. Karnataka University, Dharwad
6. Sri Padmavathi Mahila Vishwavidyalayan, Tirupati.
7. Goa University, Goa.

Women's Studies Cells:

1. Department of Sociology, Bhopal University, Bhopal
2. Department of Sociology, Jodhpur University, Jodhpur
3. College of Social Work, Hyderabad.
4. A.N.D.M.M. College, Kanpur
5. College for Women, Trivandrum
6. S.D. College, Muzaffarnagar.

The Commission also funded a seminar held at Kanpur on the 'Nature and Role of Extension Programme in the Development of Women's Studies' and approved the organisation of a workshop at Tirupati to:

- a) Clarify the concept of the women's studies programme and review the work done by various centres and
- b) Crystallize the direction to be taken by women's studies centres in achieving the objectives of equality and empowerment of women.

SECTION - 15

UGC FINANCES AND ORGANISATIONAL SET UP

15.01 Non-Plan Funds:

The University Grants Commission received a grant - in - aid of Rs.18,000.00 lakhs from the Government of India during the year under report. In addition, an amount of Rs.44.22 lakhs was also obtained under various miscellaneous items including refund of Rs.2.06 lakhs as unspent balance out of the grants paid in the previous years. Thus the total non-plan receipts in hand during 1987-88 were Rs.18,044.22 lakhs and against this grants paid amounted to Rs.18,060.65 lakhs. Detailed break-up of non-plan grants paid under various schemes during 1987-88 is given in table 15.1 below:

Table-15.1
Statement of non-plan grants paid under various schemes during 1987-88

S.No.	Purpose	Amount
		(Rs. in lakhs)
1.	UGC Administration Charges	
a.	Pay of Officers	59.44
b.	Pay of Establishment	86.26
c.	Allowances, Honoraria (including DA, Interim Relief, Bonus, CCA, LTC, TA etc.)	56.48
d.	TA/DA of Commission/Committee members	1.77

e.	Other charges like printing & Stationery, postage, telephones, electricity/water charges, upkeep of motor vehicles, publication, library books and journals, purchase of furniture and fixture, maintenance of UGC buildings, other expenditure, rent rates and taxes, departmental charges, conveyance allowance etc.	64.54
f.	Contributions for CGHS, Pension & leave salary, CP Fund, GP fund, gratuity etc.	41.16

		308.83
2.	Maintenance grants to Central Universities	10403.67
3.	Maintenance grants to Institutions deemed to be Universities	2490.00
4.	Maintenance grants to Anna and Roorkee Universities for specific purposes	80.05
5.	Maintenance grants to Constituent/ Affiliated Colleges of Delhi University	3986.22
6.	Maintenance grants to Constituent/ Affiliated College of B.H.U.	6.32
7.	House Building Advance to Institutions deemed to be universities and central Universities.	271.50

8. Teachers award for schemes like Teacher Fellowship (both general & SC/ST Candidates), National Fellowship/ Associateship, National Lectures, Emeritus Fellowship etc.)	35.86
9. Research Fellowships/Associateships	361.14
11. Scholarships/Fellowships under Engineering and Technology.	110.28
12. Grants to non-university Institutions	6.78

	18060.65

From the above table it would be observed that the Administration charges of the Commission amount to about 1.7 per cent of the total non-plan grant which was disbursed by the Commission. The major component of the non-plan funds was earmarked for meeting the maintenance expenditure of central universities, deemed universities and colleges affiliated to the central universities. It would be seen that out of the total non-plan grant, about 57.6 per cent was paid as block grant to central universities, 13.8 per cent to deemed to be universities, 0.4 per cent to Anna & Roorkee Universities for certain specific purposes and about 22.1 per cent for maintenance of colleges affiliated to central universities. The house building advance was about 1.5 per cent of the total non-plan allocation. A grant of Rs.514.06 lakhs (2.8 per cent) was given to provide various incentives to teachers and for various categories of research fellowships.

15.02 | Plan Funds

During the year under report, the Commission received grants-in-aid of Rs.13,977.08 lakhs from the Government of India for general development of the universities and Institutions including SACC* programme. In addition, a separate allocation of Rs.1320.00 lakhs was also made available for development of engineering and technical education in the universities/institutions eligible to receive grant under the UGC Act. Miscellaneous receipt under Plan head was a marginal amount of Rs.108.74 lakhs which was mainly obtained by way of interest on the bank accounts, refund of unspent balances out of grants paid in previous years etc. A plan grant of Rs.15,389.43 lakhs was paid to various institutions as indicated in table 15.2 below.

Table-15.2

Statement of Plan Grants Paid under Six Major Schemes of UGC during 1987-88

S.No.	Scheme	Universities	Colleges	Misc.	Total
		(Rs. in lakhs)			
1.	Restructuring of courses, Adult, Continuing and Extension Education Programmes	674.06	126.35	-	800.41
2.	Programmes for Quality Improvement of Education	5,772.43	3,600.02	13.94	9,386.39

* Science Advisory Committee to the Cabinet.

3. Programmes for Quality Improvement of Research and SACC	3,184.45	144.07	58.29	3,386.81
4. Mass Communication and Improvement of Weaker Sections of the Society	272.97	28.89	25.03	326.89
5. Establishment of Autonomous Colleges and Improvement of Management System of Universities and the UGC.	0.75	110.91	48.64	160.30
6. Development of Engineering and Technology	1,315.10	13.53	--	1,328.63
Total:	11,219.76	4,023.77	145.90	15,389.43

15.03 Organisational Set-up

The secretariat of the Commission is headed by a Secretary. He is assisted by four officers of the level of Additional Secretary.

The Secretariat of the Commission is organised on the pattern of Sections and Divisions. The basic unit is a Section which is headed by a Section Officer and is supported with adequate staff comprising of Assistant(s), UDC(s), LDC/Typist(s), normally numbering between five and eight depending on the work-load of each Section. Usually, for two Sections there is a Branch Officer who is either an Under Secretary or an Education Officer or an Officer of equivalent rank. Normally, four or five

Sections constitute a Division. In some cases a Division is headed by a Joint Secretary. But, normally, a Division is headed by a Deputy Secretary or an Officer of equivalent rank like Co-ordinator, Principal Scientific Officer, etc. The work of a group of Joint Secretaries/Deputy Secretaries/other officers of equivalent rank is assigned to one of the Officers of the rank of Additional Secretary.

For specialised items of work, which are generally of a specified duration, or for specific assignments, the Commission engages Consultants. At present, there are three Consultants who advise the Commission on matters pertaining to data-based systems of management, mass communication and educational technology, and physical education & sports.

According to Section 10 of the UGC Act, the Commission appoints a Secretary and other employees as necessary for the efficient functioning of the Commission. These appointments are made on the basis of the recruitment rules made by the Central Government.

The manner of appointment includes direct recruitment, promotion, deputation and contractual appointments.

Professor S.K. Khanna
Secretary

Professor Yash Pal
Chairman

Professor K. Satchidananda M
Vice-Chairman

Members

Shri Anil Bordia
Dr. V.C. Kulandaiswamy
Shri R. R. Gupta
Prof. Suresh Dalal
Prof.(Mrs.) Archana Sharma
Prof. G. Padmanaban
Dr. M. Aram
Shri Kireet Joshi

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DEVELOPMENTS IN UNIVERSITIES

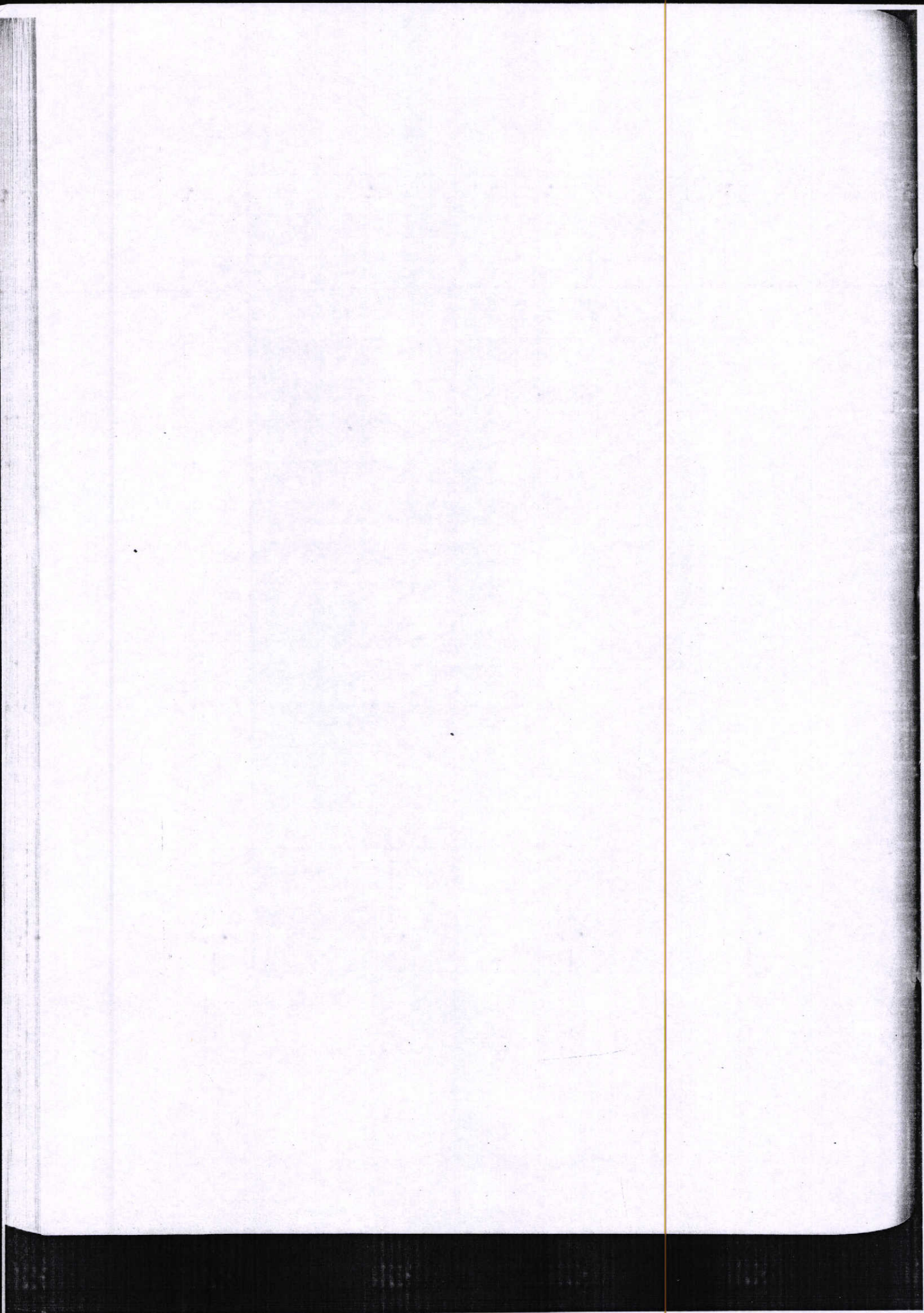
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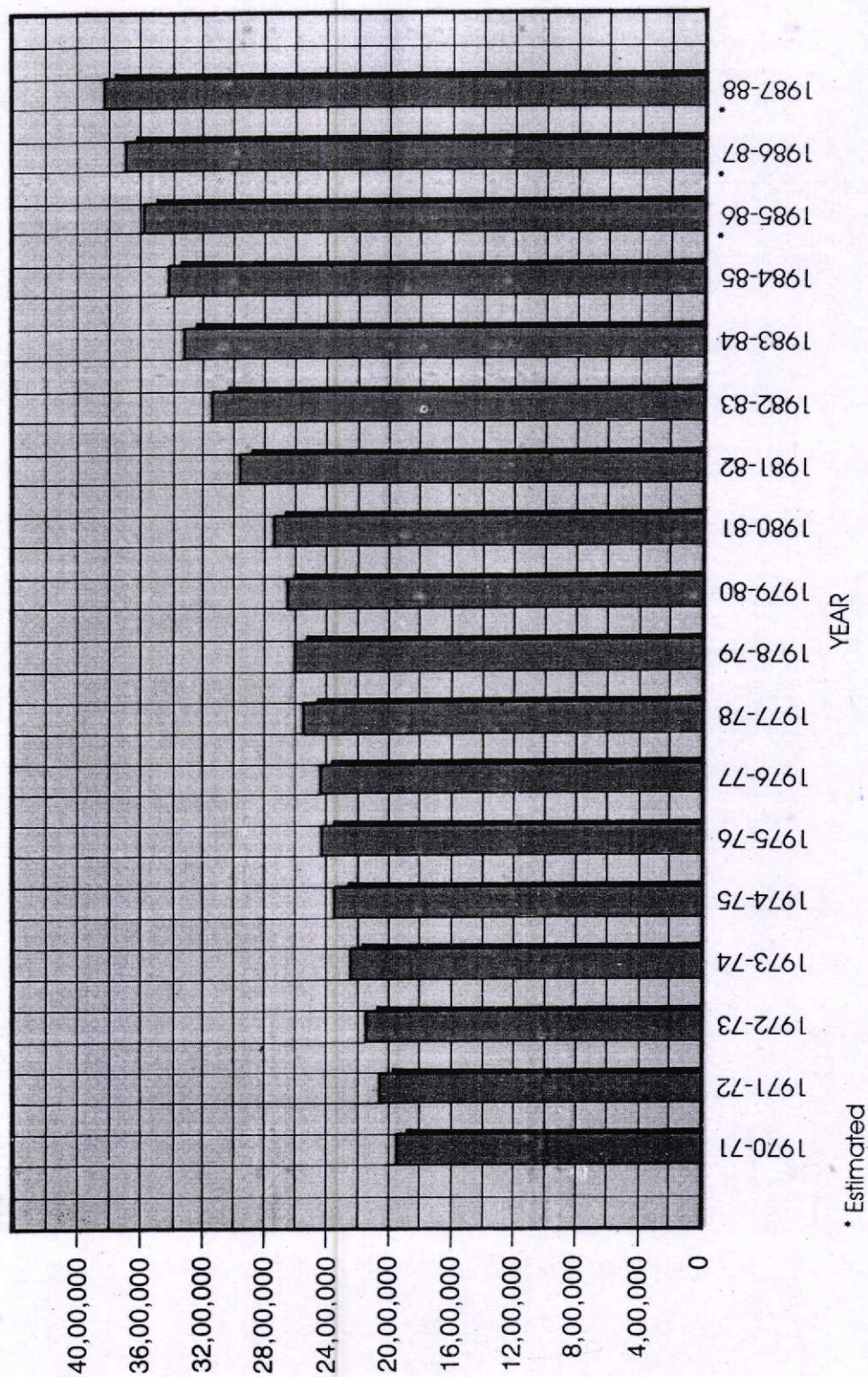
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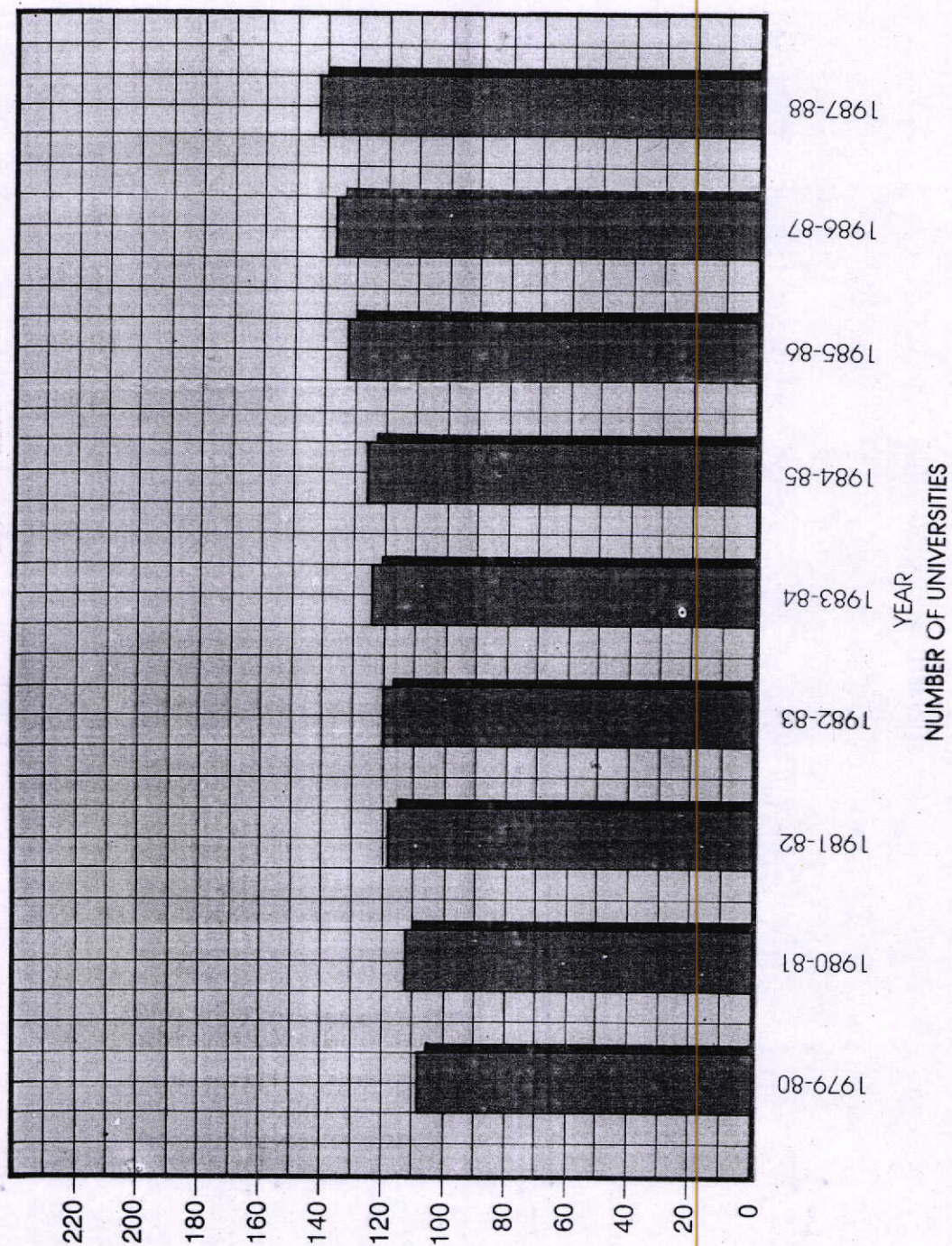
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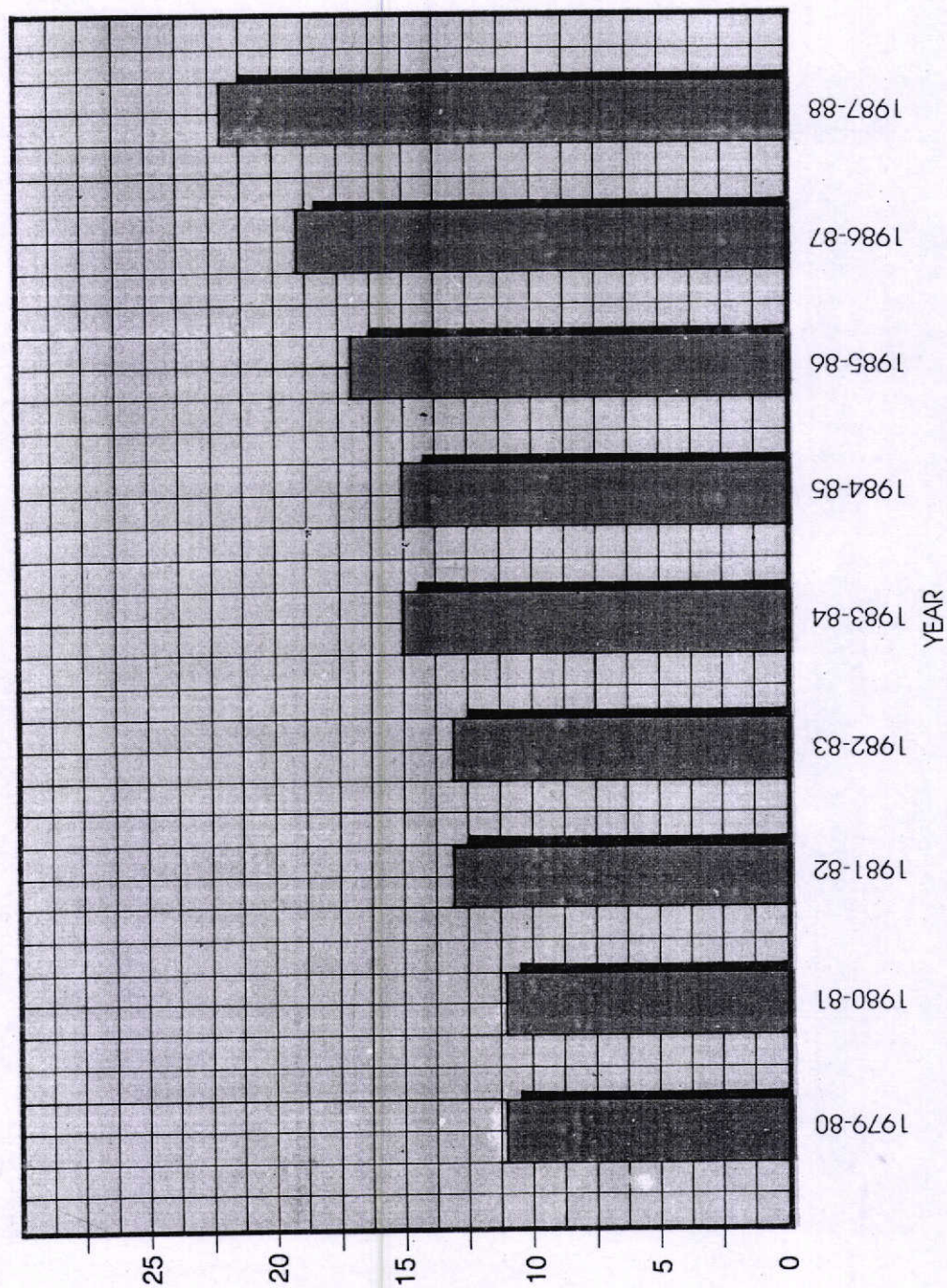
GROWTH OF STUDENT ENROLMENT **1970-71 to 1987-88** **(UNIVERSITY LEVEL)**



GROWTH OF UNIVERSITIES 1979-80 to 1987-88

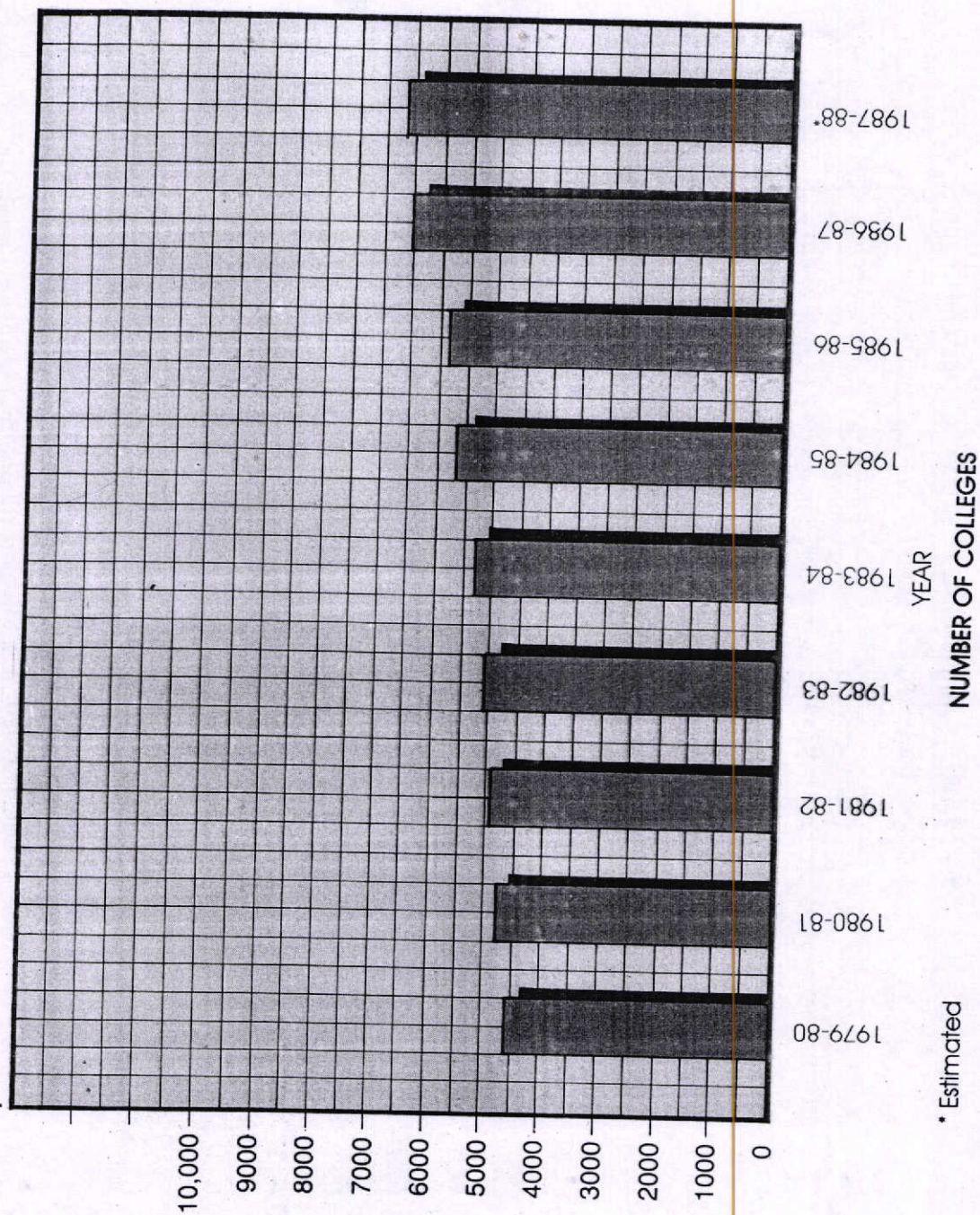


GROWTH OF INSTITUTIONS DEEMED TO BE UNIVERSITIES
1979-80 to 1987-88



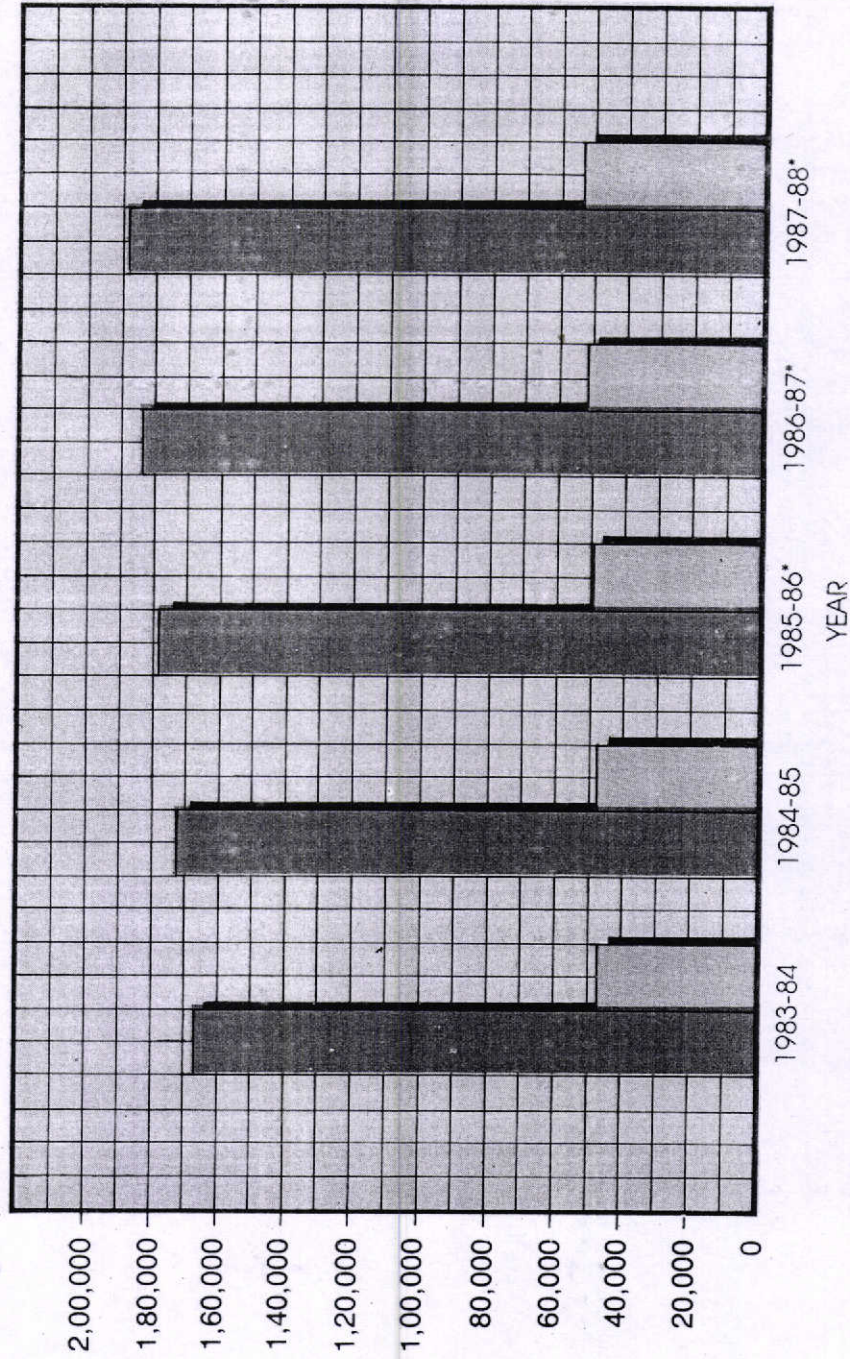
NUMBER OF INSTITUTIONS DEEMED TO BE UNIVERSITIES

GROWTH OF COLLEGES 1979-80 to 1987-88



TEACHING STAFF IN UNIVERSITY DEPARTMENTS/UNIVERSITY COLLEGES AND AFFILIATED COLLEGES

1983-84 to 1987-88

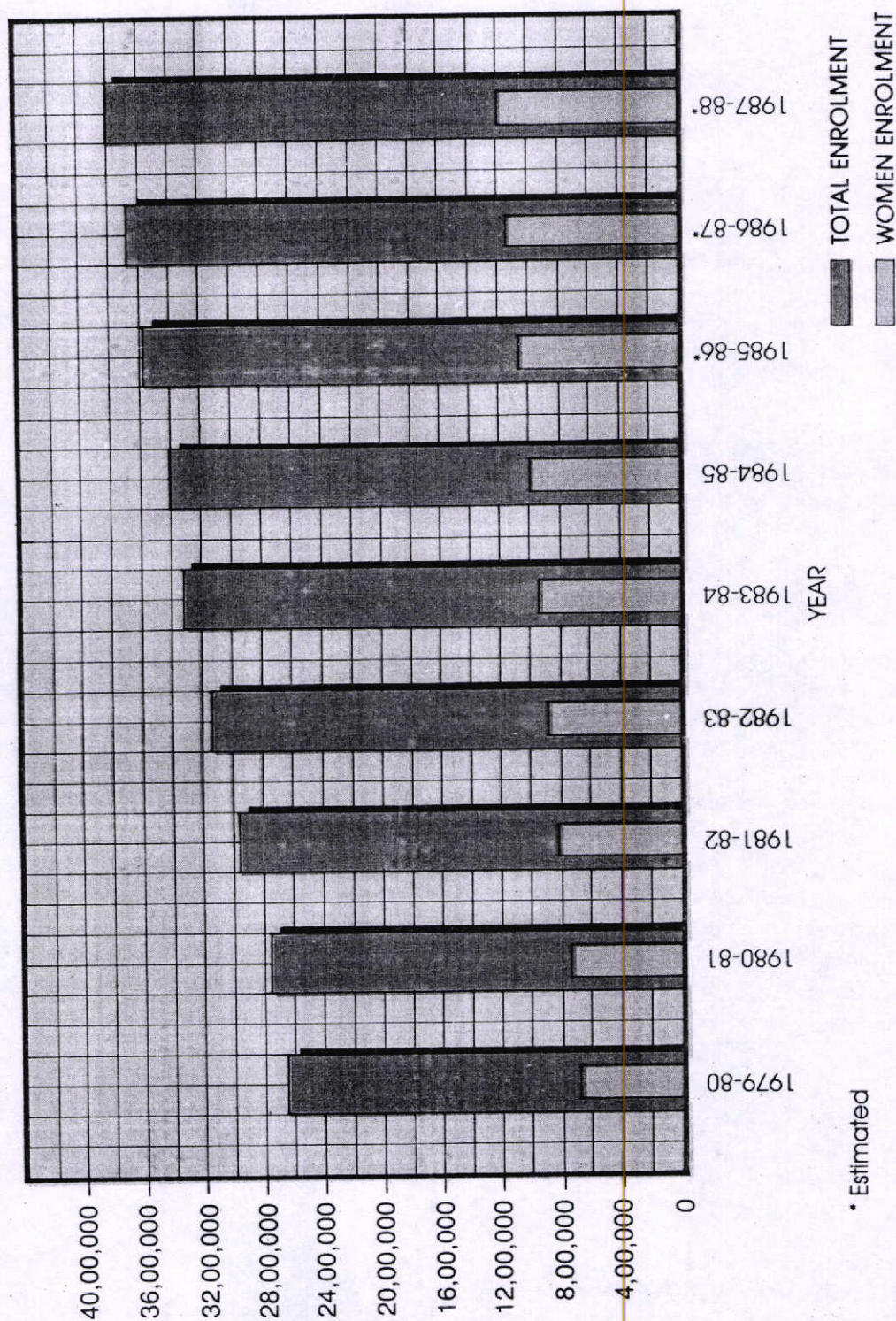


Includes Principals/Senior Lecturers/Readers/ Assistant Professors/Temporary Lecturers and Tutors/Demonstrators (AFFILIATED COLLEGES)

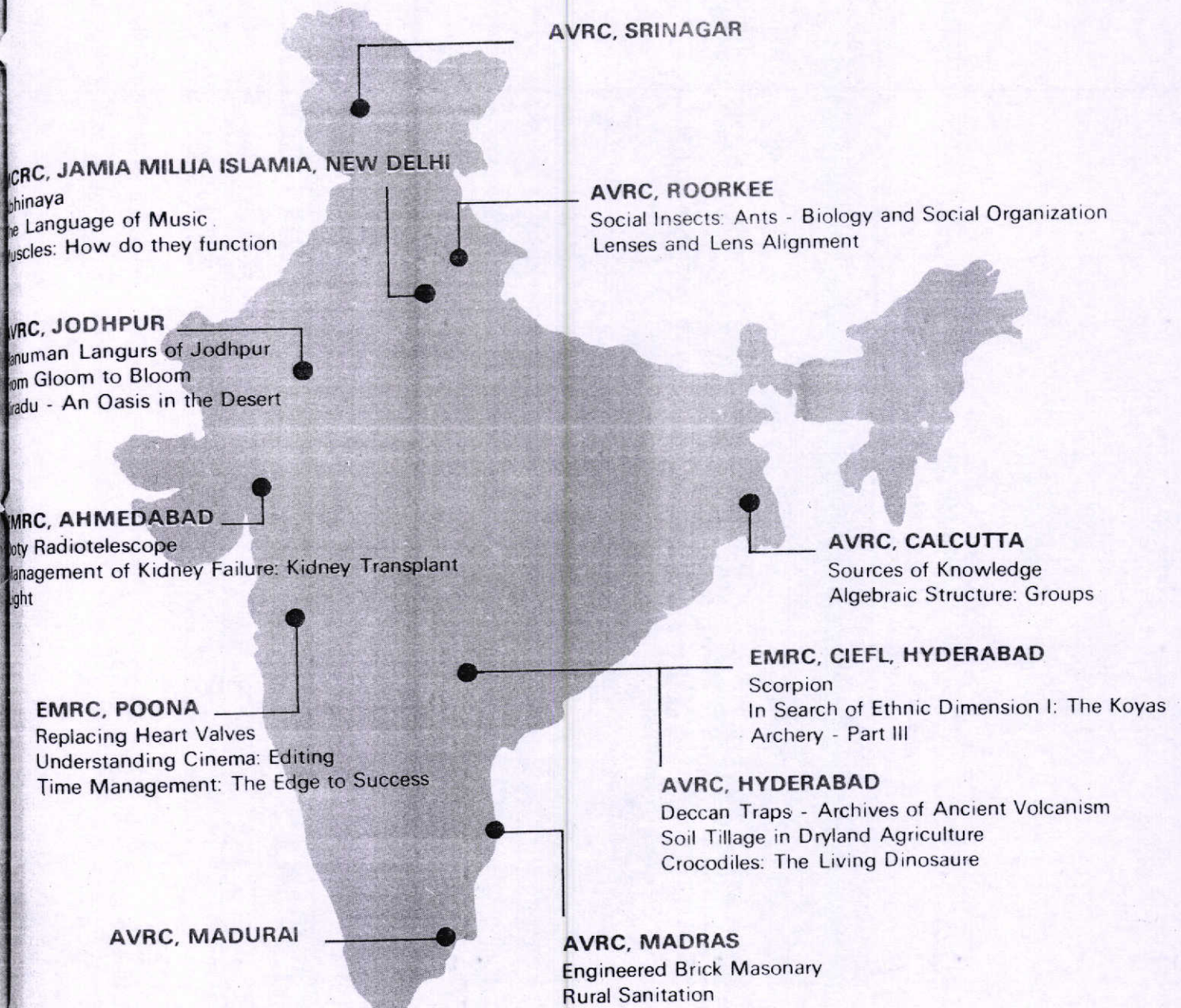
Includes Professors, Readers, Lecturers and Tutors/Demonstrators (UNIVERSITY COLLEGES)

* Estimated

WOMEN ENROLMENT (UNIVERSITY LEVEL) 1979-80 to 1987-88



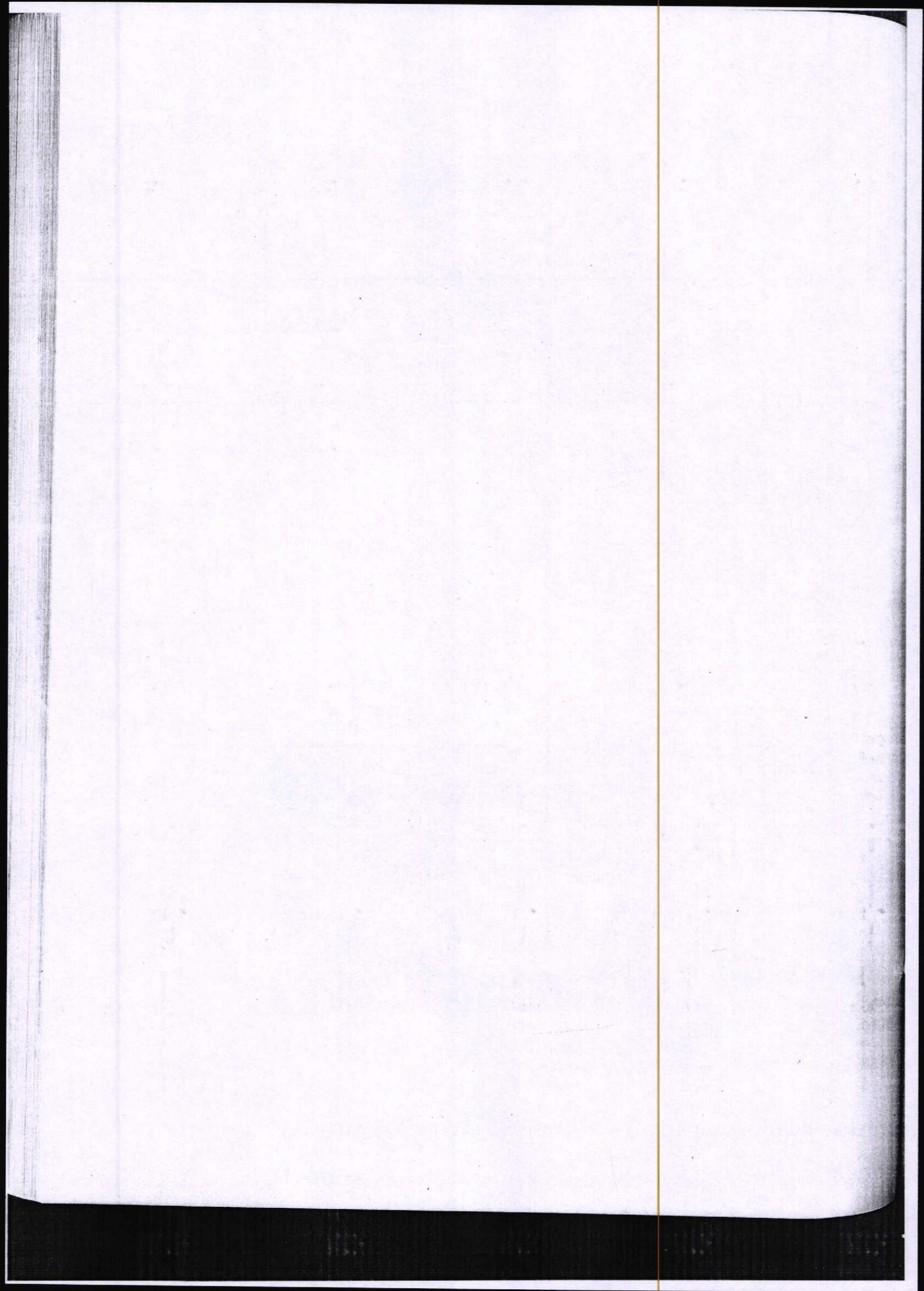
AVRC'S and EMRC's at Universities

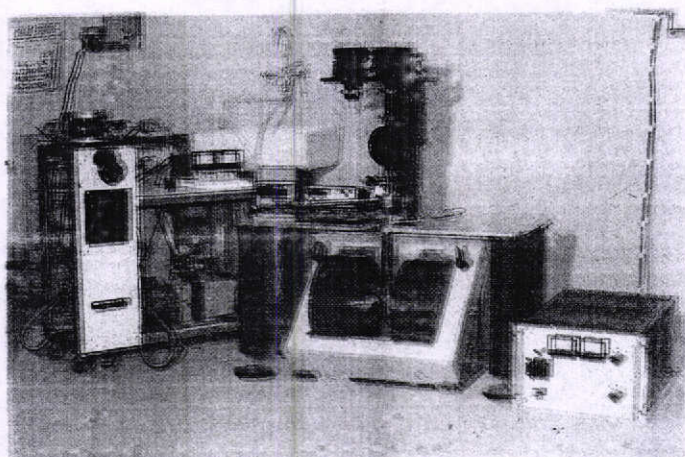


AVRC Stands for Audio Visual Research Centre

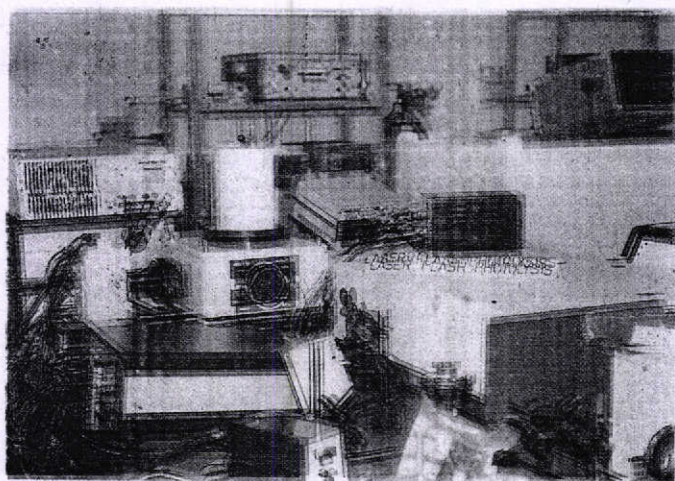
EMRC Stands for Educational Media Research Centre

DESIGN: EMRC GUJARAT UNIVERSITY AHMEDABAD

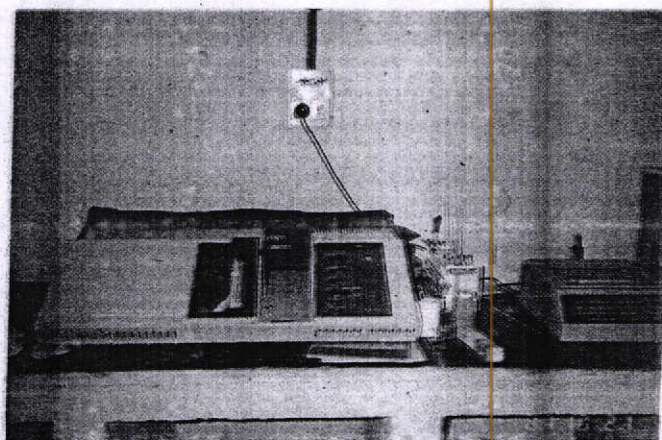




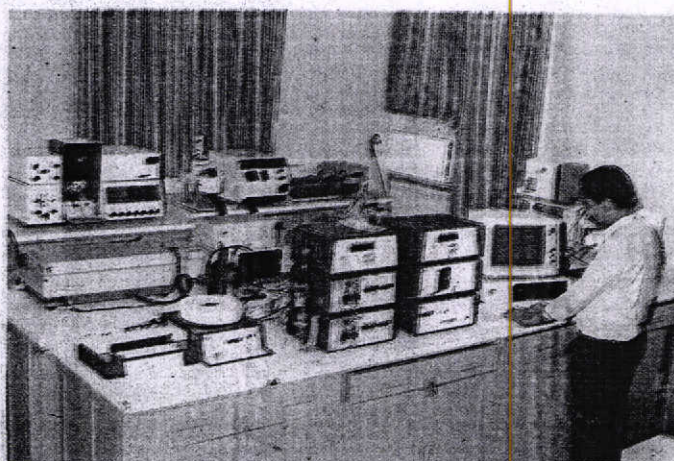
*Magnetic Susceptibility System Poona University
(Physics)*



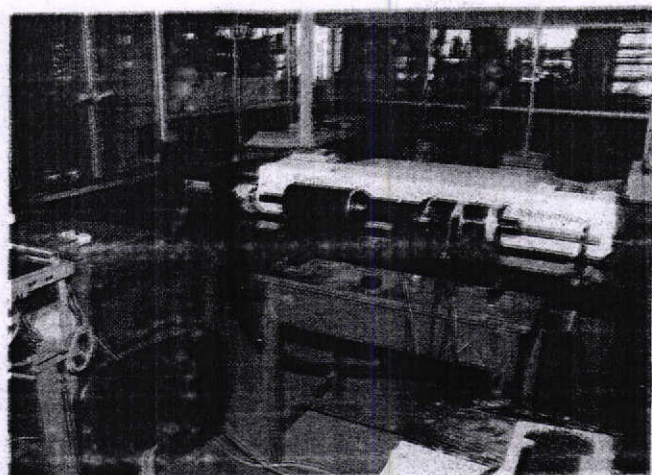
*Nd-YAG Laser coupled flash photolysis, Madras Uni-
versity (Chemistry)*



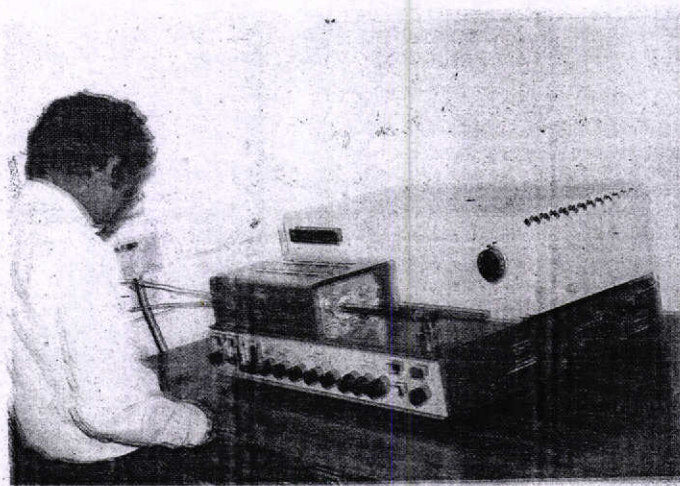
Spectrometer, Ahmednagar College



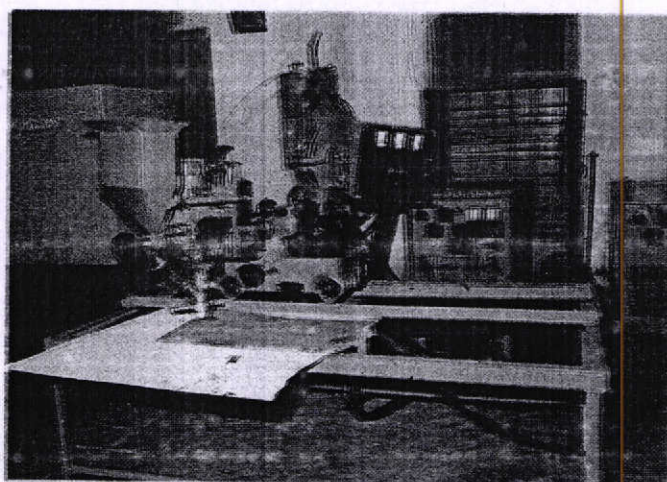
High Performance Liquid Chromatograph (LKB System) in the foreground and Atomic Absorption Spectrometer in the second row, Anna University (Chemical Engg.)



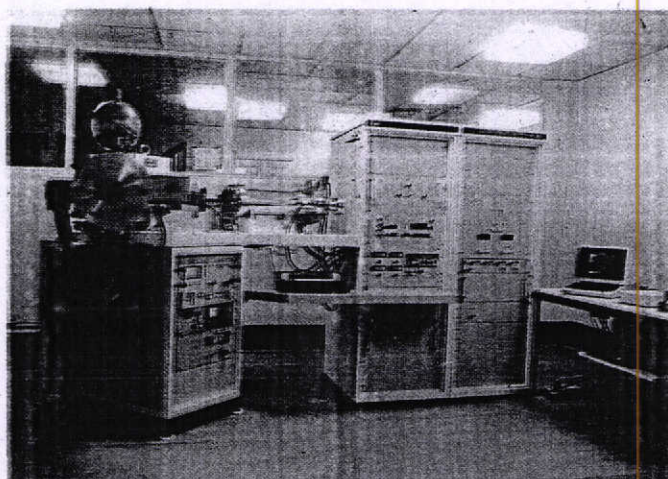
*Laser Doppler Anemometer (LDA) Bombay University
(Chemical Technology)*



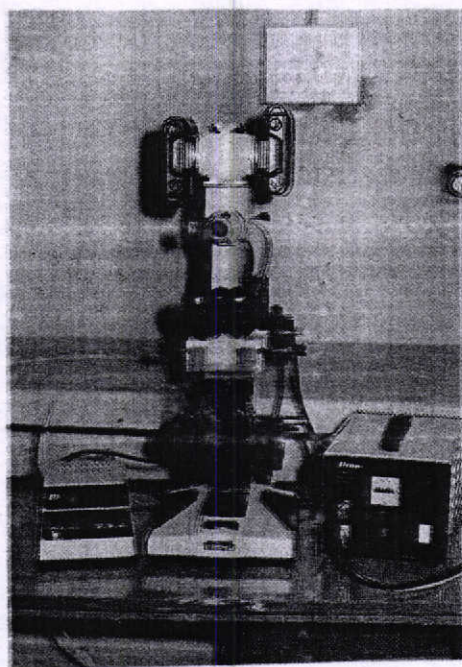
Elemental Analyser, Hyderabad University (Chemistry)



*SUBMERGED/MIG-MAG (CO₂)
WELDING MACHINE
Banaras Hindu University (Metallurgy).*

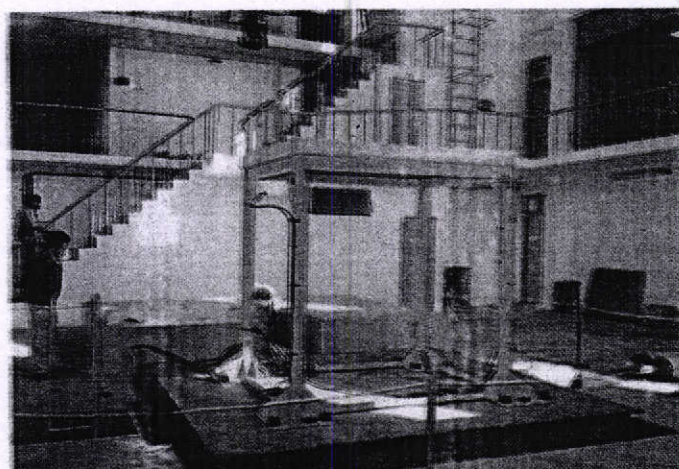


Thermal Ionisation Mass Spectrometer, Presidency College, Calcutta (Geology)

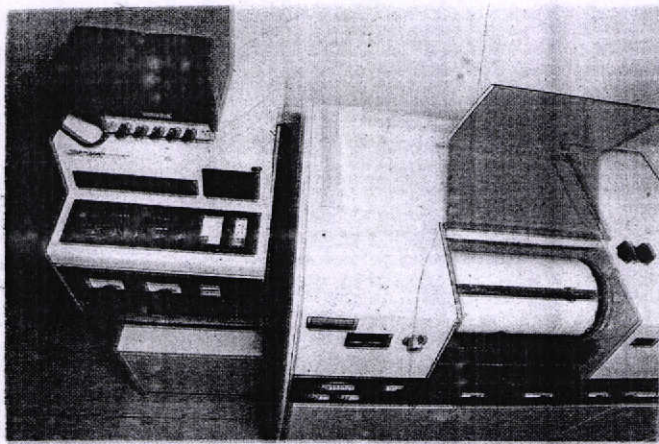


*NIKON BIOLOGICAL PHOTOMICROSCOPE
'OPTIPHOT'*

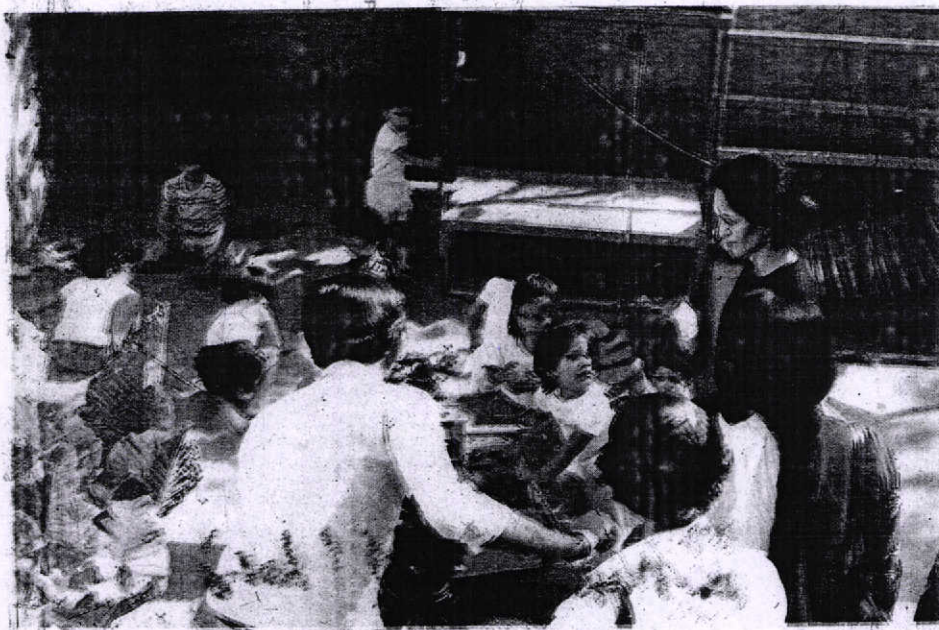
Banaras Hindu University (Zoology)



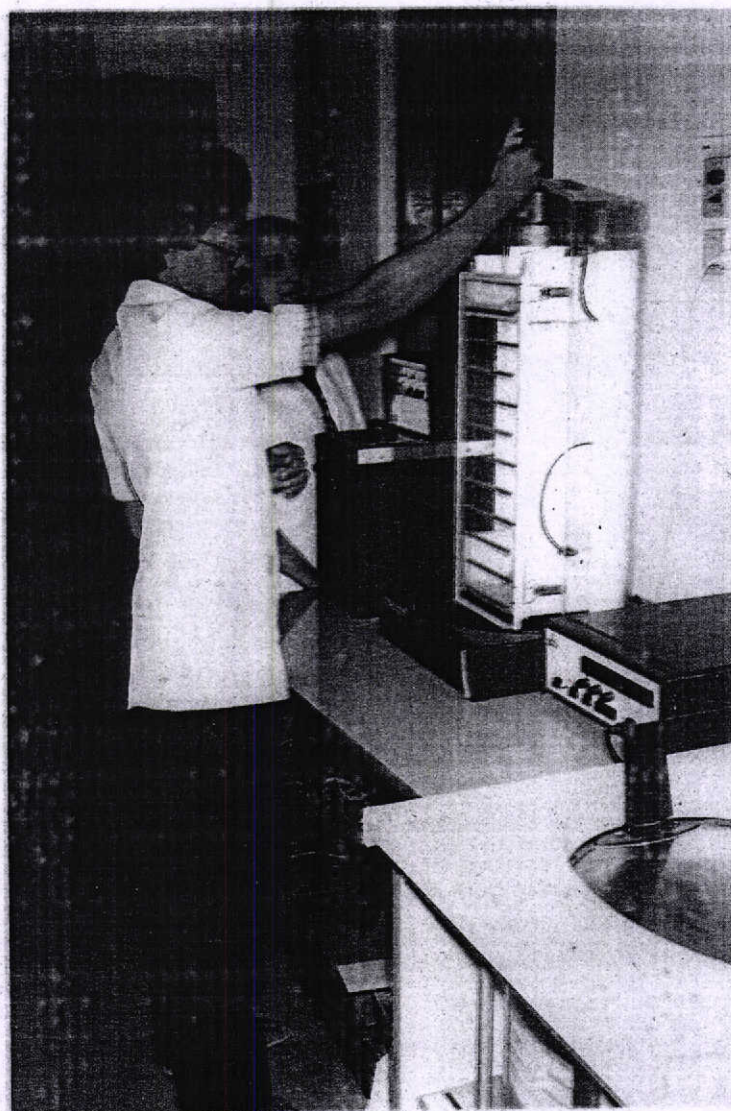
*Large model tested on shake table for testing
shake-table performance, Roorkee University, (Ear-
thquake Engg.)*



*SPECTRO-POLARIMETER
IISc. Bangalore (Molecular Biophysics)*



Indoor Shooting at the Educational Media Research Centre Gujarat University, Ahmedabad



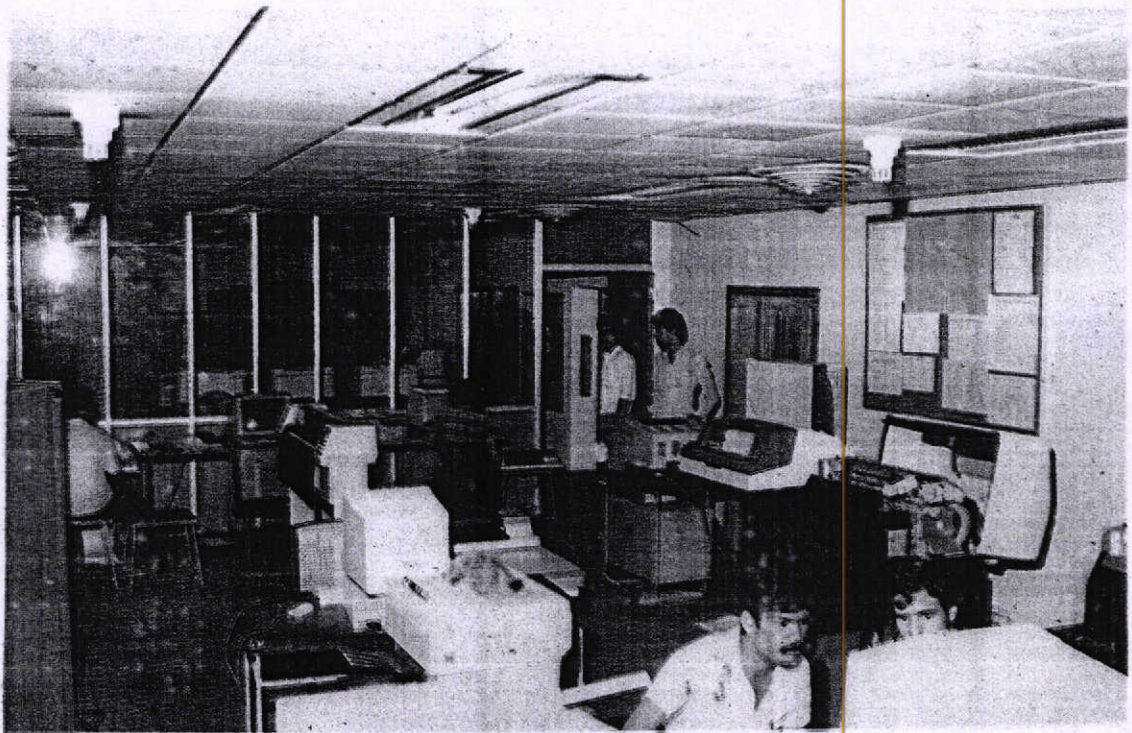
*Genetic Engineering Laboratory, Deptt. of Bio-Chemistry at the Indian Institute of Science,
Bangalore*



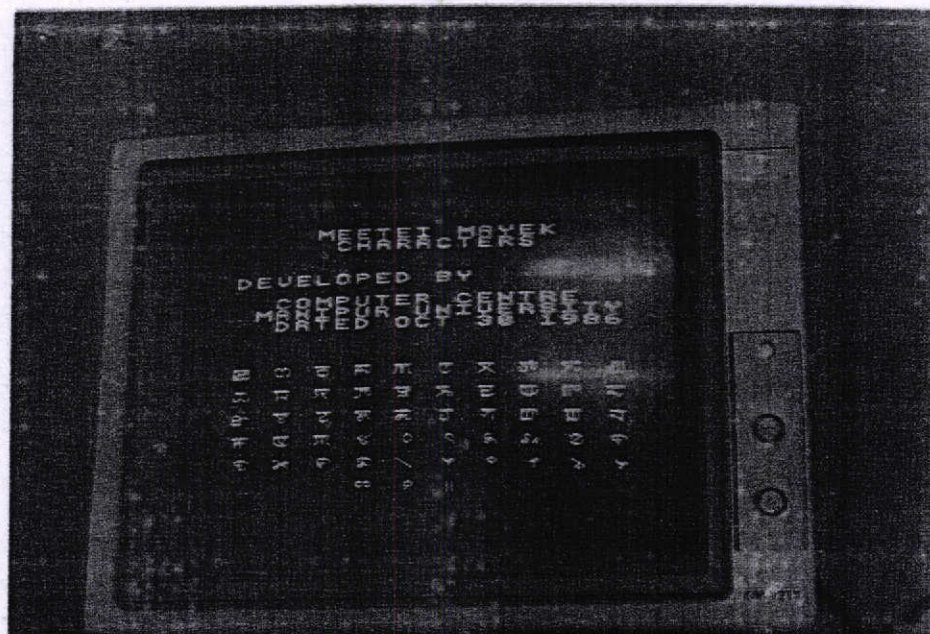
*Production for country-wide class room at the Mass Communication Research centre, Jamia Millia
Islamia*



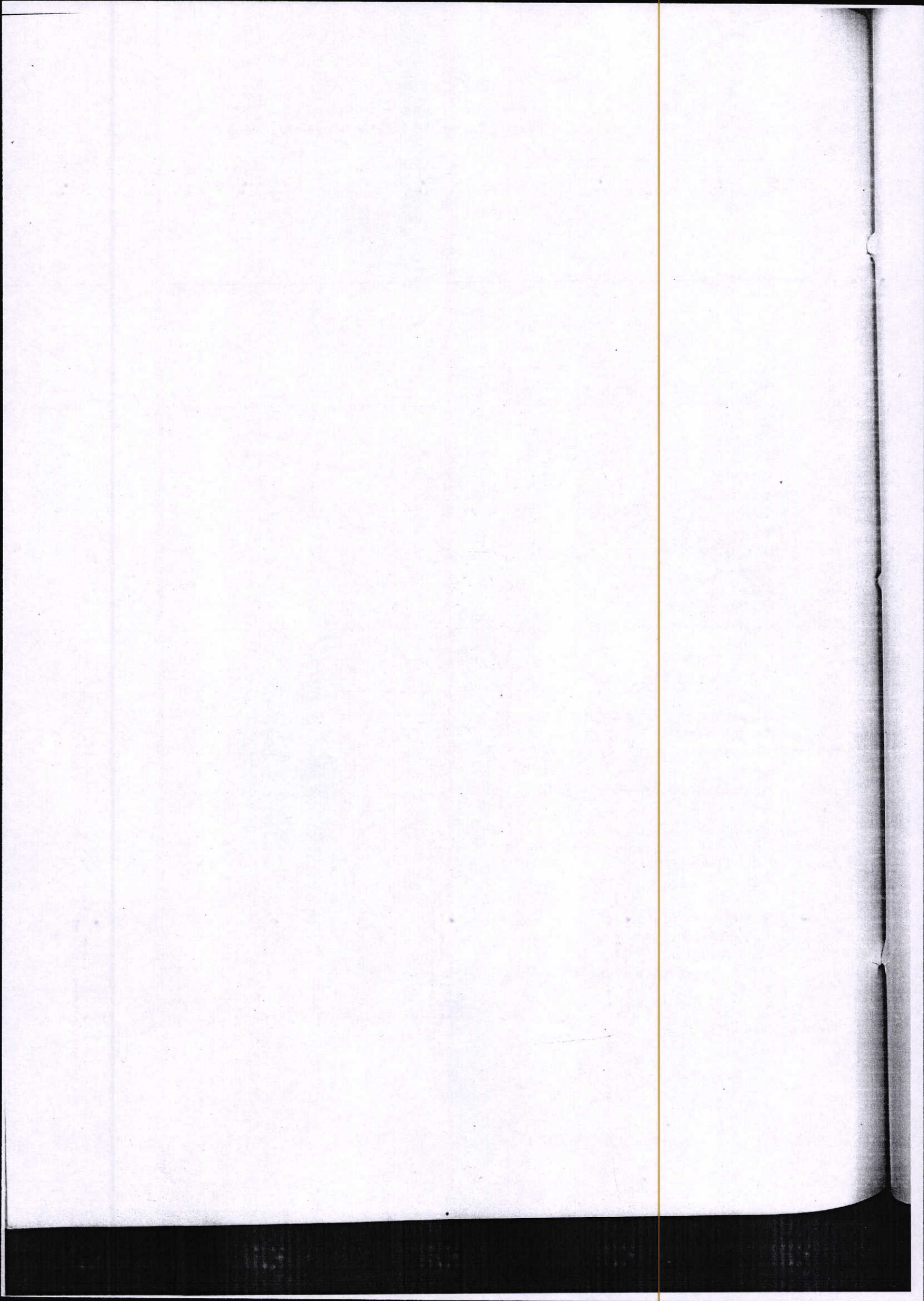
Leather Work Class Under Continuing Education Programme



Super Computer Education Research Centre at the Indian Institute of Science, Bangalore



Meetei Mayek (Old Manipuri Script) Developed at Computer Centre, Manipur University



APPENDIX—I
List of Universities and Institutions Deemed to be Universities in India
1987-'88 (A. on 31.3.1988)

Sl. No.	Name of the University/ Institution	Year of Establishment
1.	Calcutta	1857
2.	Bombay	1857
3.	Madras	1857
4.	Allahabad	1887
5.	Banaras	1916
6.	Mysore	1916
7.	Patna	1917
8.	Osmania	1918
9.	Aligarh	1921
10.	Lucknow	1921
11.	Delhi	1922
12.	Nagpur	1923
13.	Andhra	1926
14.	Agra	1927
15.	Annamalai	1929
16.	Kerala	1937
17.	Utkal	1943
18.	Dr Hari Singh Gaur	1946
19.	Rajasthan	1947
20.	Punjab	1947
21.	Gauhati	1948
22.	Kashmir	1949
23.	Roorkee	1949
24.	Poona	1949
25.	M.S. University of Baroda	1949
26.	Karnataka	1949
27.	Gujarat	1950
28.	S.N.D.T. Women's	1951
29.	Visva-Bharati	1951
30.	Bihar	1952
31.	Sri Venkateswara	1954
32.	Sardar Patel	1955
33.	Jadavpur	1955
34.	Kurukshetra	1956
35.	Indira Kala Sangeet	1956
36.	Vikram	1957
37.	Gorakhpur	1957
38.	Rani Durgavati	1957
39.	Sampurnanand Sanskrit	1958
40.	Marathwada	1958
41.	G.B. Pant University of Agriculture & Technology	1960
42.	Burdwan	1960
43.	Kalyani	1960
44.	Bhagalpur	1960

APPENDIX - I (Contd.)

Sl. No.	Name of the University/ Institution	Year of Establishment
45.	Ranchi	1960
46.	K.S. Darbhanga Sanskrit	1961
47.	Punjab Agricultural	1962
48.	Punjabi	1962
49.	Orissa University of Agriculture & Technology	1962
50.	North Bengal	1962
51.	Rabindra Bharati	1962
52.	Magadh	1962
53.	Jodhpur	1962
54.	Sukhadia	1962
55.	Shivaji	1962
56.	Devi Ahilya	1964
57.	Jiwaji	1964
58.	Ravi Shankar	1964
59.	University of Agricultural Sciences	1964
60.	Andhra Pradesh Agricultural	1964
61.	Bangalore	1964
62.	Jawaharlal Nehru Krishi	1964
63.	Dibrugarh	1965
64.	Kanpur	1965
65.	Meerut	1965
66.	Madurai Kamraj	1965
67.	Saurashtra	1965
68.	South Gujarat	1965
69.	Berham	1967
70.	Sambalpur	1967
71.	Gujarat Ayurveda	1968
72.	Jawaharlal Nehru	1968
73.	Mahatma Phule Krishi Vidyapith	1968
74.	Calicut	1968
75.	Awadesh Pratap Singh	1968
76.	Assam Agricultural	1968
77.	Guru Nanak Dev	1969
78.	Jammu	1969
79.	Punjabrao Krishi	1969
80.	Haryana Agricultural	1970
81.	Himachal Pradesh	1970
82.	Bhopal	1970
83.	Rajendra Agricultural	1970
84.	Tamil Nadu Agricultural	1971
85.	Cochin	1971
86.	Kerala Agricultural	1972
87.	Gujarat Agricultural	1972
88.	Konkan Krishi Vidyapith	1972
89.	L.N. Mithila	1972
90.	Marathwada Krishi Vidyapith	1972

APPENDIX - I (Contd.)

Sl. No.	Name of the University/ Institution	Year of Establishment
91.	Jawaharlal Nehru Technological	1972
92.	North Eastern Hill	1973
93.	Kumaon	1973
94.	Garhwal	1973
95.	Kashi Vidyapith	1974
96.	Bidhan Chandra Krishi	1974
97.	Hyderabad	1974
98.	Narendra Deo University of Agriculture & Technology	1974
99.	Chandrashekhar Azad University of Agricultural and Technology	1974
100.	Avadh	1975
101.	Bundelkhand	1975
102.	Rohilkhand	1975
103.	Maharishi Dayanand	1976
104.	Kakatiya	1976
105.	Nagarjuna	1976
106.	Bhavnagar	1978
107.	Anna	1978
108.	Himachal Pradesh Krishi	1978
109.	Manipur	1980
110.	Gulbarga	1980
111.	Mangalore	1980
112.	Birsa Agricultural	1980
113.	Vidyasagar	1981
114.	Sri Jagannath Sanskrit	1981
115.	Sri Krishnadevaraya	1981
116.	Tamil	1981
117.	Bharathiar	1982
118.	Bharathidasan	1982
119.	Sher-e-Kashmir University of Agricultural Science & Technology	1982
120.	Andhra Pradesh Open University	1982
121.	Sri Padmavathy Mahila	1983
122.	Amravati	1983
123.	Guru Ghasidas	1983
124.	Gandhi ji	1983
125.	Mother Teresa Women's	1984
126.	Alagappa	1985
127.	Arunachal	1985
128.	Pondicherry	1985
129.	Goa	1985
130.	Indira Gandhi National Open	1985
131.	Telugu	1985
132.	Dr. Yashwant Singh Parmar University of Horticulture & Forestry	1986
133.	University of Health Sciences	1986
134.	University of Agricultural Sciences, Dharwad	1986
135.	North Gujarat	1986
136.	Indira Gandhi Krishi	1987

State Institute of Medical Sciences, Lucknow	1987
	1987
	1987
	1987
	1987
	1987
UNIVERSITIES:	
Bangalore	1958
Research Institute	1958
Yalaya, Hardwar	1962
Delhi	1962
abad	1963
ence, Bombay	1964
y & Science, Pillani	1964
hanbad	1967
& Foreign Languages, Hyderabad	1973
, Gandhigram	1976
itecture, New Delhi	1979
ute, Agra	1981
Higher Learning, Prasanthi Nilayam	1981
than	1983
Institute, Izatnagar	1983
opulation Sciences, Bombay	1985
ing and Technology, Patiala, Punjab	1985
, Mesra	1986
, Tirupati	1987
shtriya Sanskrit Vidyapeeth, New Delhi	1987
, Pure	1987

APPENDIX-II
GROWTH OF STUDENT ENROLMENT (1968-69 to 1987-88)

Year	Total Enrolment	Increase over the preceding year	Percentage increase
1968-69	15,66,103	1,95,842	14.3
1969-70	17,92,780	2,26,677	14.5
1970-71	19,53,700	1,60,920	9.0
1971-72	20,65,041	1,11,341	5.7
1972-73	21,68,107	1,03,066	5.0
1973-74	22,34,385	66,278	3.1
1974-75	23,66,541	1,32,156	5.9
1975-76	24,26,109	59,568	2.5
1976-77	24,31,563	5,454	0.2
1977-78	25,64,972	1,33,409	5.5
1978-79	26,18,228	53,256	2.1
1979-80	26,48,579	30,351	1.2
1980-81	27,52,437	1,03,858	3.9
1981-82	29,52,066	1,99,629	7.3
1982-83	31,33,093	1,81,027	6.1
1983-84	33,07,649	1,74,556	5.6
1984-85	34,04,096	96,447	2.9
1985-86*	35,70,897	1,66,801	4.9
1986-87*	36,81,870	1,10,973	3.1
1987-88*	38,14,417	1,32,547	3.6

* Estimated

APPENDIX-III
Growth of Enrolment (Excluding PUC/Inter/Pre-prof.)
During the period from 1983-84 to 1987-88

S. No.	State/Union Territory	1983-84		
		Enrolment	Increase over the preceding year	Percentage increase
1.	Andhra Pradesh	2,51,930	7,598	3.1
2.	Assam	71,396	5,466	8.3
3.	Bihar	2,41,478	43,460	22.0
4.	Gujarat	1,96,110	- 2,328	- 1.2
5.	Haryana	70,329	5,307	8.2
6.	Himachal Pradesh	15,954	- 351	- 2.2
7.	Jammu & Kashmir	24,247	4,057	20.1
8.	Karnataka	2,38,874	6,784	2.9
9.	Kerala	1,29,375	4,264	3.4
10.	Madhya Pradesh	2,44,765	19,185	8.5
11.	Maharashtra	4,02,487	29,102	7.8
12.	Manipur	9,590	1,035	12.1
13.	Meghalaya/Nagaland	7,534	- 673	- 8.2
14.	Orissa	66,790	1,937	3.0
15.	Punjab	1,20,691	3,111	2.6
16.	Rajasthan	1,63,273	8,410	5.4
17.	Tamil Nadu	2,39,711	10,636	4.6
18.	Uttar Pradesh	4,70,135	14,830	3.3
19.	West Bengal/Tripura/Sikkim	2,51,765	13,267	5.6
20.	Delhi	91,215	- 541	- 0.6
Total		33,07,649	1,74,556	5.6

APPENDIX-III (Contd.)

S.No.	State/Union Territory	1984-1985		
		Enrolment	Increase over the preceding year	Percentage increase
1.	Andhra Pradesh	2,57,651	5,721	2.3
2.	Assam	73,961	2,565	3.6
3.	Bihar	2,36,856	-4,522	-1.9
4.	Gujarat	2,00,297	4,187	2.1
5.	Haryana	69,622	-707	-1.0
6.	Himachal Pradesh	17,880	1,926	12.1
7.	Jammu & Kashmir	25,004	757	3.1
8.	Karnataka	2,39,137	263	0.1
9.	Kerala	1,33,302	3,927	3.6
10.	Madhya Pradesh	2,51,382	6,617	2.7
11.	Maharashtra	4,35,307	32,820	8.2
12.	Manipur	9,291	-299	-3.1
13.	Meghalaya/Nagaland	8,466	932	12.1
14.	Orissa	70,105	3,315	5.0
15.	Punjab	1,26,348	5,657	4.7
16.	Rajasthan	1,69,587	6,314	3.9
17.	Tamil Nadu	3,42,609	2,898	1.2
18.	Uttar Pradesh	4,75,069	4,934	1.0
19.	West Bengal/Tripura/Sikkim	2,66,033	14,268	5.7
20.	Delhi	96,089	4,874	5.3
Total		34,04,096	96,447	2.9

APPENDIX-III (Contd.)

S. No.	State/Union Territory	1985-86		
		Enrolment (Estimated)	Increase over the preceding year	Percentage increase
1.	Andhra Pradesh	2,72,595	14,944	5.8
2.	Assam	79,878	5,917	8.0
3.	Bihar	2,59,869	22,913	9.7
4.	Gujarat	2,06,306	6,009	3.0
5.	Haryana	73,451	3,829	5.5
6.	Himachal Pradesh	19,096	1,216	6.8
7.	Jammu & Kashmir	26,904	1,900	7.6
8.	Karnataka	2,47,507	8,370	3.5
9.	Kerala	1,38,234	4,932	3.7
10.	Madhya Pradesh	2,63,196	11,814	4.7
11.	Maharashtra	4,68,826	33,519	7.7
12.	Manipur	9,746	455	4.9
13.	Meghalaya/Nagaland	8,643	177	2.1
14.	Orissa	73,190	3,085	4.4
15.	Punjab	1,31,149	4,801	3.8
16.	Rajasthan	1,75,353	5,766	3.4
17.	Tamilnadu	2,50,858	8,249	3.4
18.	Uttar Pradesh	4,85,521	10,452	2.2
19.	West Bengal/Tripura/Sikkim	2,80,931	14,898	5.6
20.	Delhi	99,644	3,555	3.7
Total		35,70,897	1,66,801	4.9

APPENDIX-III (Contd.)

S.No.	State/Union Territory	1986-87		
		Enrolment (Estimated)	Increase over the preceding year	Percentage increase
1.	Andhra Pradesh	2,79,822	7,227	2.7
2.	Assam	81,001	1,123	1.4
3.	Bihar	2,65,095	5,226	2.0
4.	Gujarat	2,13,549	7,243	3.5
5.	Haryana	73,637	186	0.3
6.	Himachal Pradesh	20,250	1,154	6.0
7.	Jammu & Kashmir	29,455	2,551	9.5
8.	Karnataka	2,54,049	6,542	2.6
9.	Kerala	1,43,593	5,359	3.9
10.	Madhya Pradesh	2,72,458	9,262	3.5
11.	Maharashtra	4,78,643	9,817	2.1
12.	Manipur	11,046	1,300	13.3
13.	Meghalaya/Nagaland	9,205	562	6.5
14.	Orissa	73,637	447	0.6
15.	Punjab	1,36,229	5,080	3.9
16.	Rajasthan	1,80,412	5,059	2.9
17.	Tamilnadu	2,61,413	10,555	4.2
18.	Uttar Pradesh	5,08,098	22,577	4.7
19.	West Bengal/Tripura/Sikkim	2,87,186	6,255	2.2
20.	Delhi	1,03,092	3,448	3.5
Total		36,81,870	1,10,973	3.1

APPENDIX-III(Contd.)

S. No.	State/Union Territory	1987-88			
		Enrolment (Estimated)	Increase over the preceding year	Percentage increase	Average annual Compound rate of growth during the period from 1983-84 to 1987-88
1.	Andhra Pradesh	2,89,896	10,074	3.6	3.6
2.	Assam	83,917	2,916	3.6	4.1
3.	Bihar	2,67,009	1,914	0.7	2.5
4.	Gujarat	2,25,051	11,502	5.1	3.5
5.	Haryana	80,103	6,466	8.8	3.3
6.	Himachal Pradesh	20,979	729	3.6	3.1
7.	Jammu & Kashmir	29,752	297	1.0	5.2
8.	Karnataka	2,67,009	12,960	5.1	2.8
9.	Kerala	1,48,762	5,169	3.6	3.5
10.	Madhya Pradesh	2,78,452	5,994	2.2	3.3
11.	Maharashtra	4,90,511	11,868	2.4	5.1
12.	Manipur	11,443	397	3.6	4.5
13.	Meghalaya/Nagaland	9,536	331	3.6	6.1
14.	Orissa	76,288	2,651	3.6	3.4
15.	Punjab	1,41,133	4,904	3.6	4.0
16.	Rajasthan	1,86,906	6,494	3.6	3.4
17.	Tamilnadu	2,74,638	13,225	5.1	3.5
18.	Uttar Pradesh	5,32,518	24,420	4.8	3.2
19.	West Bengal/Tripura/Sikkim	2,93,710	6,524	2.3	3.9
20.	Delhi	1,06,804	3,712	3.6	4.0
Total		38,14,417	1,32,547		

Note: As the estimates are based on back-date, the enrolments relating to the new states, some of them are having universities, have not been shown separately. The enrolments relating to Assam, Maharashtra and Meghalaya include the enrolments of the new states viz. Arunachal Pradesh, Goa and Mizoram respectively. The enrolments relating to the Union territories of A & N Islands, Pondicherry and Daman & Diu are clubbed with the enrolments of Punjab, Tamilnadu and Gujarat respectively. The enrolment relating to the Union territory of Chandigarh is merged with that of Punjab.

APPENDIX-IV
Student Enrolment in the Universities: Stage-wise (1983-84 to 1987-88)

Stage	1983-84		1984-85		1985-86*		1986-87*		1987-88*	
	Enrolment	Percentage of total	Enrolment	Percentage of total	Enrolment	Percentage	Enrolment	% of total	Enrolment	Percentage of total
Graduate	29,12,487	38.0	29,99,621	88.0	31,42,389	88.0	32,40,046	88.0	33,56,687	88.0
Post-graduate	3,13,110	9.5	3,22,541	9.5	3,39,235	9.5	3,49,778	9.5	3,62,370	9.5
Research	36,249	1.1	38,160	1.1	39,280	1.1	40,500	1.1	41,958	1.1
Diploma/ Certificate	45,893	1.4	43,774	1.4	49,993	1.4	51,546	1.4	53,402	1.4
Total	33,07,649	100.0	34,04,096	100.0	35,70,897	100.0	36,81,870	100.0	38,14,417	100.0

*Estimated

APPENDIX-V
Stage-wise Enrolment: Universities and Affiliated Colleges 1987-88 (Estimated)

Stage	University Departments/ University Colleges	Affiliated Colleges	Total	Percentage in Affiliated Colleges			
				1987-88	1986-87	1985-86	1984-85
Graduate	4,13,956	29,42,731	33,56,687	87.7	87.7	87.7	87.9
Postgraduate	1,57,269	2,05,101	3,62,370	56.5	56.5	56.5	56.9
Research	35,664	6,294	41,958	15.0	14.9	14.9	15.2
Diploma/ Certificate	30,119	23,283	53,402	43.6	43.2	43.2	43.4
Total	6,37,008	31,77,409	38,14,417	83.3	83.3	83.3	83.6

APPENDIX-VI ✓
Student Enrolment in the Universities: Faculty-wise 1983-84 to 1987-88

Course of study	1983-84		1984-85		1985-86		1986-87		1987-88	
	Enrolment	Per- cent- age of total	Enrolment	Per- cent- age of total	Enrolment (esti- mated)	Per- cent- age of total	Enrolment (Esti- mated)	Per- cent- age of total	Enrolment (Esti- mated)	Per- cent- age of total
Arts (including oriental Learning)	13,38,106	40.4	13,72,277	40.3	14,39,071	40.3	14,83,794	40.3	15,37,210	40.3
Science	6,53,092	19.7	6,69,563	19.7	7,03,467	19.7	7,25,328	19.7	7,51,440	19.7
Commerce	7,03,638	21.3	7,38,506	21.7	7,67,743	21.5	7,91,602	21.5	8,20,100	21.5
Education	74,679	2.3	76,522	2.2	82,131	2.3	84,683	2.3	87,732	2.3
Engineering/Technology	1,53,131	4.6	1,59,046	4.7	1,64,261	4.6	1,69,366	4.6	1,75,463	4.6
Medicine	1,18,989	3.6	1,18,890	3.5	1,28,552	3.6	1,32,547	3.6	1,37,319	3.6
Agriculture	41,588	1.3	41,741	1.2	46,422	1.3	47,864	1.3	49,587	1.3
Veterinary Science	9,268	0.3	9,413	0.3	10,713	0.3	11,046	0.3	11,443	0.3
Law	1,94,555	5.9	1,95,708	5.7	2,07,112	5.8	2,13,549	5.8	2,21,236	5.8
Others	20,603	0.6	22,430	0.7	21,425	0.6	22,091	0.6	22,887	0.6
Total	33,07,649	100.0	34,04,096	100.0	35,70,897	100.0	36,81,870	100.0	38,14,417	100.0

APPENDIX-VII

Distribution of colleges According to Courses of Study: 1983-84 to 1987-88 (Number of Colleges)

Courses of Study	(Number of Colleges*)				
	1983-84	1984-85	1985-86	1986-87	1987-88**
Arts Science & Commerce	3,758	4,004	4,132	4,354	4,428
Technical/Professional Break up	563	618	655	695	719
(a) Engineering/Technology	191	223	242	253	257
(b) Medicine/Pharmacy/ Ayurveda /Nursing/ Dentistry/Homoeopathy	286	303	320	342	361
(c) Agriculture	58	63	63	67	68
(d) Veterinary Science	28	29	30	33	33
Law	186	194	199	202	204
Physical Education & Education	391	430	441	479	470
Oriental Learning	283	277	321	720	714
Music/Fine Arts	65	67	68	62	62
Total	5,246	5,590	5,816	6,512	6,597

*Excludes Junior Colleges and Colleges having only Diploma/Certificate Courses.

**Provisional

APPENDIX-VIII
Increase in Number of Colleges during the period from 1983-84 to 1987-88
(Statewise)

State/Union Territory	1983-84	1984-85	1985-86	1986-87	1987-88*	Increase during the period from 1983-84 to 1987-88
	No. of Colleges (UC + AC)	No. of Colleges (UC + AC)	Increase over the preceding year	No. of colleges (UC + AC)	Increase over the preceding year	
1	2	3	4	5	6	7
1. Andhra Pradesh	420	470	50	492	22	495
2. Arunachal Pradesh	—	—	—	—	—	3
3. Assam	154	162	8	171	9	180
4. Bihar	473	504	31	568	64	617
5. Goa	—	—	—	—	—	19
6. Gujarat	285	295	10	302	7	311
7. Haryana	143	143	—	143	—	142
8. Himachal Pradesh	27	27	—	33	6	34
9. Jammu & Kashmir	41	39	-2	39	—	41
10. Karnataka	498	535	37	556	21	603
11. Kerala	184	184	—	188	4	200
12. Madhya Pradesh	396	445	49	472	27	502
13. Maharashtra	693	801	108	834	33	874
14. Manipur	22	23	1	23	—	23
15. Meghalaya/ Nagaland	33	34	1	34	—	37
16. Orissa	179	215	36	225	10	248
17. Punjab	228	228	—	226	-2	231
18. Rajasthan	221	222	1	221	-1	237
19. Tamil Nadu	285	297	12	311	14	311
20. Uttar Pradesh	561	561	—	562	1	964
21. West Bengal/ Tripura/Sikkim	348	348	—	357	9	372
22. Delhi	55	57	2	57	—	57
23. Pondicherry	—	—	—	2	2	11
Total	5,246	5,590	344	5,816	226	6,512

*Provisional UC = University colleges AC = Affiliated colleges

APPENDIX-IX

Increase in Number of Affiliated colleges (Arts, Science and Commerce only) during the period 1983-84 to 1987-88 (Statewise)

State/Union Territory	1983-84	1984-85		1985-86		1986-87		1987-88**		
	No. of colleges	No. of colleges	Increase over the preceding year	No. of colleges	Increase over the preceding year	No. of colleges	Increase over the preceding year	No. of colleges	Increase over the preceding year	Increase during the period from 1983-84 to 1987-88
1	2	3	4	5	6	7	8	9	10	11
1. Andhra Pradesh	287	319	32	319	—	323	4	323	—	36
2. Arunachal Pradesh	—	—	—	—	—	3	3	3	—	3
3. Assam	125	132	7	141	9	150	9	150	—	25
4. Bihar*	331	359	28	400	41	448	48	467	14	131
5. Goa	—	—	—	—	—	10	10	10	—	10
6. Gujarat	191	196	5	200	4	207	7	212	5	21
7. Haryana	106	107	1	107	—	107	—	111	4	5
8. Himachal Pradesh	22	22	—	28	6	29	1	33	4	11
9. Jammu & Kashmir	23	23	—	23	—	25	2	25	—	2
10. Karnataka	314	342	28	354	12	373	19	396	23	82
11. Kerala	128	129	1	130	1	141	11	141	—	13
12. Madhya Pradesh	283	331	48	360	29	385	25	396	11	113
13. Maharashtra	472	532	60	548	16	563	15	565	2	93
14. Manipur	18	19	1	19	—	19	—	19	—	1
15. Meghalaya/Nagaland	25	25	—	25	—	28	3	29	1	4
16. Orissa	118	145	27	154	9	175	21	179	4	61
17. Punjab	176	176	—	175	1	180	5	180	—	4
18. Rajasthan	130	129	-1	128	-1	136	8	137	1	47
19. Tamilnadu	204	205	1	208	3	204	-4	206	2	2
20. Uttar Pradesh	390	390	—	391	1	391	—	391	—	1
21. West Bengal/ Tripura/Sikkim	273	273	—	281	8	295	14	297	2	24
22. Delhi (U.T.)	36	38	2	38	—	38	—	38	—	2
23. Pondicherry (U.T.)	—	—	—	2	2	6	4	7	1	7
Total	3,652	3,892	240	4,031	139	4,326	205	4,310	74	658

*Also includes constituent colleges

**Provisional

APPENDIX-X

Number and Distribution of Teaching Staff in the University Departments/University Colleges according to Designation (1983-84 to 1987-88)

Year	Professors	Readers	Lecturers*	Tutors/Demonstrators	Total
1983-84	5,117 (10.9)	11,046 (23.6)	28,650 (61.1)	2,046 (4.4)	46,859 (100.0)
1984-85	5,683 (12.0)	11,841 (25.0)	27,863 (58.8)	1,995 (4.2)	47,382 (100.0)
1985-86**	5,792 (11.8)	12,026 (24.5)	29,241 (59.6)	2,029 (4.1)	49,008 (100.0)
1986-87**	5,933 (11.6)	12,481 (24.4)	30,588 (59.8)	2,148 (4.2)	51,150 (100.0)
1987-88**	6,273 (11.8)	13,079 (24.6)	31,580 (59.4)	2,233 (4.2)	53,165 (100.0)

Note: Figures in parentheses indicate the percentages of the cadres to the total staff in the corresponding year.

*Including Assistant Professors and Assistant Lecturers

**Estimated.

APPENDIX-XI

Number and Distribution of Teaching Staff in the Affiliated Colleges according to Designation (1983-84 to 1987-88)

Year	Senior Teachers*	Lecturers**	Tutors/Demonstrators	Total
1983-84	22,817 (13.5)	1,39,153 (82.0)	7,671 (4.5)	1,69,641 (100.0)
1984-85	22,368 (13.0)	1,42,524 (82.5)	7,827 (4.5)	1,72,719 (100.0)
1985-86***	23,921 (13.4)	1,46,235 (82.2)	7,745 (4.4)	1,77,901 (100.0)
1986-87***	24,371 (13.3)	1,50,621 (82.2)	8,246 (4.5)	1,83,238 (100.0)
1987-88***	24,923 (13.2)	1,55,389 (82.3)	8,496 (4.5)	1,88,808 (100.0)

Note: Figures in parentheses indicate the percentages of the cadres to the total staff in the corresponding year.

*Including Principals/Senior Lecturers/Readers.

**Including Assistant Professors and Assistant Lecturers.

***Estimated.

APPENDIX-XII
Number of Doctorate Degrees awarded Faculty-wise (1982-83 to 1986-87)

Faculty	1982-83	1983-84	1984-85	1985-86	1986-87*
Arts	2,422	2,678	2,754	2,886	2,987
Science	2,892	2,890	2,922	2,838	2,937
Commerce	175	177	185	263	272
Education	191	187	239	219	227
Engineering / Technology	160	192	210	194	201
Medicine	71	59	70	61	63
Agriculture	575	648	576	627	649
Veterinary Science	64	65	102	155	160
Law	20	8	25	34	35
Others	27	30	56	69	72
Total	6,597	6,934	7,139	7,346	7,603

*Provisional

Appendix XII (a)
Details of Departments Supported
under COSIST

<i>S. No.</i>	<i>Name of the Department/ University</i>	<i>Year of Support</i>	<i>PG Education and Research (Thrust Areas)</i>	<i>Major Equipment provided</i>
1	2	3	4	5
PHYSICS				
1.	Department of Radio Physics & Electronics, Calcutta University.	1983-84	Solid state and Electronic devices, Micro-electronics techniques, Fabrication of Impattdiodes including establishment of a mm wave laboratory and photovoltaic devices.	Semiconductor characterisation unit for concentration, impurity profile, lifetime etc. measurement. Plasma and dry etching equipment, Environmental control equipment, Cryotemperature generator.
2.	Department of Physics,	1983-84	Experimental Nuclear Physics	Multiuser data analysis system with 4 ADCS, Panjab University. Helium leak detector, Systems for characterisation and study of electrical/optical properties of materials and devices, Opto-acoustic spectrometer.
3.	Department of Physics, University of Poona, Pune.	1983-84	PG Education only	Geir-Dunkle integrating sphere-spectrophotometer (range 0.32-2.5 U), Magnetic susceptibility measuring set up, Photoacoustic spectrometer, 'Neuromatic' 2-Channel neuromyograph.
4.	Department of Physics, Indian Institute of Sciece, Bangalore.	1983-84	Crystal growth and material preparation.	Programmed temperature controlled furnace, Accessories for crystal pulling unit (RF Heater, pulling mechanism, environment control, temperature control), Liquid helium liquifier, Cryogenic measuring facilities.
5.	Department of Physics, Banaras Hindu University.	1984-85	Physics of materials with particular reference to synthesis, crystal growth and characterisation of crystals, lasers and molecular photo-physics.	Electron microscope TEM with STEM, EBIC, EDAX & ELS attachment, DTA/TGA/DSC facility, Mask processor, Mask aligner vacuum chucks, scribes and ultrasonic bonders, Universal Czochralski crystal puller, Nd/YAG Laser pumper, Dye laser with facilities for pressure tuning and polarization control.
6.	School of Physics, University of Madras.	1984-85	Nuclear and theoretical physics	X-ray diffractometer 1730/10 alongwith microprocessor, High purity germanium detectors, Multichannel analyser with two point digital spectrum stabilizer, Mossbauer spectrometer with large velocity.
7.	Department of Physics, Roorkee University.	1985-86	Solid state physics (theoretical and experimental), Physics of Molecular Collision.	Computer perriferial devices, Simultaneous thermal analysis system for PG/DTA.
8.	School of Physics Andhra University	1987-88	Physics of materials and space physics	Fabry-Perot Interferometer, VHF Doppler sounder, Transportable digital ionosonde-IPS-42.

Appendix XII (a) (Contd.)

S. No.	Name of the Department/ University	Year of Support	PG Education and Research (Thrust Areas)	Major Equipment provided
1	2	3	4	5
9.	Department of Physics Aligarh Muslim University	1987-88	Theoretical Physics interacting with experimental Nuclear Physics and high energy Physics. Laser Spectroscopy and study of materials.	FTIR, EPR Unit, Compton suppressed Gamma ray spectrometer
10.	Department of Physics University of Delhi	1987-88	Theoretical Physics	Experiments Rutherford Scattering, X-ray Fluorescence, Electro-optics. Characterisation of surface acoustic Wave devices, moving-film X-ray diffractometer.
11.	Department of Physics University of Allahabad	1987-88	Solid State & Molecular Physics.	Microvax II* add ons, Multichannel analyser with accessories. Microwave Net work analyser, Thermal analysis system, RF impedance analyser
12.	School of Physics University of Hyderabad.	1987-88	Theoretical Physics, Physics of Materials with particular reference to disordered materials High TC Super conductors.	NMR magnetometer, Microvax II, Liquid nitrogen plant, Liquid helium plant.
13.	Departments of Physics Jadavpur University	1987-88	Physics of the condensed matter, High energy and theoretical physics.	Semiautomatic scanning and measurement system for Nuclear tract, Bubble chamber scanner tape drive.
CHEMISTRY				
14.	Department of Chemistry, Panjab University.	1983-84	Organic and Physical Chemistry	G.L.C. Fischer spinning band columns, Inverted chromatography, Chromatotron molecular stills, Photocorrelation spectrometer, HPLC.
15.	Solid State and Structural Chemistry, Indian Instt. of Science, Bangalore.	1983-84	Solid state and Structural Chemistry	IR spectrometer, Raman spectrometer, Closed circuit helium cryostat
16.	Department of Chemistry. University of Delhi.	1985-55	Synthesis & Structural Organic Chemistry with particular reference to biologically active compounds, peptides etc., Physical Chemistry with particular reference to studies of micelles and instrumentation.	Computer system, HPLC, Polarograph, Programmable thermostat.
17.	Department of Chemistry, University of Hyderabad	1984-85	Organic Synthesis	—
18.	Department, of Chemistry, Jodhpur University.	1984-85	Phytochemistry of arid zone plants, soil Chemistry and Physical Chemistry.	Stop flow spectrometer, C,H,N analyser, HPLC, Mini computer.
19.	School of Chemistry, University of Madras,	1984-85	Inorganic Chemistry	Nd-YAG laser, ESR spectrometer with photo-chem, accessories, Stop flow acc., Corrected spectra accessories for Spectrofluorimeter.
20.	Department of Chemistry, University of Poona.	1984-85	Radiation and Nuclear Chemistry	Liquid scintillation counter, Multichannel analyser, Ga-Li and Si-Li detector, Gamma source.

Appendix XII (a) (Contd.)

S. No.	Name of the Department/ University	Year of Support	PG Education and Research (Thrust Areas)	Major Equipment provided
1	2	3	4	5
21.	Department of Chemistry, Rajasthan University.	1984-85	Organometallic Chemistry and organofluorine Chemistry.	X-ray diffraction unit.
22.	Department of Organic Chemistry, Indian instt. of Science, Bangalore.	1984-85	Organic Chemistry.	High resolution mass spectrometer with GC.
23.	Department of Chemistry North-Eastern Hill University	1986-87	Physical & Organic Chemistry.	Proton NMR spectrometer, Gas Chromatograph, Closed helium cryocooler attachment for ESR-Spectrometer, Electro Chemical Instrument (Cyclic Voltmeter), Liquid nitrogen cryostat.
24.	School of Chemistry Andhra University	1987-88	Marine Natural Product	FT-NMR with multiprobe, GLC Tracer with FID, Automatic C,H,N-analyser
25.	Department of Chemistry Jadavpur University	1987-88	Analytical Chemistry	NMR, AAS, Ion Chromatograph, Spectrofluorimeter, HPLC, Solution Calorimeter.
26.	Department of Chemistry Guru Nanak Dev University	1987-88	Organic Chemistry	High resolution multi nuclear 90 MHz analyser, Densitometer, vis. Spectrophotometer.
27.	Department of Chemistry Gorakhpur University	1987-88	Physical & Inorganic Chemistry	NMR 60 MHz, IR Spectrophotometer, Element Analyser, Photoirradiation & Corrosion measurement System.
28.	Department of Chemistry Banars Hindu University	1987-88	Structural Chemistry	Mass Spectrometer, Peripheral mini Computer with suitable software, I.R., Electrochemistry system.
LIFE SCIENCES & BIO-SCIENCES				
29.	Deptt. of Bio-Chemistry, Instt. of Med. Scs., Banaras Hindu University.	1983-84	Molecular Biology & Genetic Engineering.	Drive unit for ultracentrifuge, HPLC, Circular dichromic spectrophotometer, GLC Large fermentor.
30.	Department of Botany, Calcutta University.	1983-84	Cell Biology, Chromosome Research	Liquid scintillation counter, HPLC, Gilson analyser, Lyophiliser, CO ₂ Incubator and specialised electrophoresis unit, Gas chromatograph equipped with flame ionisation and nitrogen detector unit.
31.	School of Life Sciences, Jawaharlal Nehru University.	1983-84	Radiation Biology, Tissue culture and Molecular Biology including Genetic Engineering.	GLC, Refrigerated centrifuge, ESR spectrophotometer, HPLC.
32.	School of Bio-Sciences, Madurai Kamraj University.	1983-84	Molecular Genetics, Immunology, Plant pathology and plant physiology.	Ultracentrifuge, Liquid scintillation counter.
33.	Department of Micro biology, M.S. University of Baroda.	1983-84	Industrial Microbiology & Microbial Genetics.	HPLC, Electron microscope, Lyophilizer, Scintillation counter.

Appendix XII (a) (Contd.)

<i>S. No.</i>	<i>Name of the Department/ University</i>	<i>Year of Support</i>	<i>PG Education and Research (Thrust Areas)</i>	<i>Major Equipment provided</i>
1	2	3	4	5
34.	PG School of Biological Studies, Ahmednagar College (Poona Univ.)	1983-84	Evolutionary Genetics	NMR spectrometer, Refrigerated high speed centrifuge with rotors. UV Spectrophotometer with special attachment for study of DNA melting profiles & DNA reassociation. Radioimmunoassay & Fraction plot accessories for the liquid scintillation counter.
35.	Department of Biochemistry Osmania University.	1984-85	Chemistry & Biochemistry of amino peptides and proteins, metal toxicity and fungal metabolism.	UV-VIS recording spectrophotometer, Processor controlled liquid scintillation system. AAS Orion ion analyser & electrodes for F, NH ₄ ⁺ , NO ₃ CA etc., HPLC 3 Ternary gradient model LC-4A.
36.	Entomology Research Institute, Loyola College Madras University, Madras.	1984-85	Host specificity in relation in insect-plant interaction.	HPLC, Refrigerated centrifuge, UV spectrometer, Mini bomb calorimeter.
37.	Department of Micro biology & Cell Biology Indian Instt. of Science, Bangalore.	1984-85	Gene structure, Organisation and functions in micro-organism and Eukaryotes, microbial metabolism & applied Microbiology, Immunology of pathogenic organism, Tynerimmunology immunodiagnostic technology.	Electron microscope model EM-109 R with ultra microtome, Fast protien liquid chromatography system, fermenter, UV-Spectrophotometer, UV transilluminator with camera, high voltage electrophoresis system.
38.	Department of Biochemistry, Indian Instt. of Science, Bangalore.	1984-85	Lipids and Biomembranes, Molecular Endocrinology, Neurochemistry and Bio-energetics.	High speed centrifuge, Liquid scintillation counter, Ultra centrifuge with rotors, spectro fluorimeter, HPLC.
39.	Department of Zoology,	1985-86	Genetics and Vertebrate Endocrinology.	Image analyser, HPLC.
40.	Department of Zoology, Delhi University.	1985-86	Cell and developmental Biology, reproductive Endocrinology, Physiology and Toxicology.	Flow cytometer, HPLC, Tissue culture, Hybridoma facility, GLC, Liquid scintillation counter.
41.	Department of Zology, Banaras Hindu University, Varanasi.	1985-86	Reproductive Physiology & Endocrinology, Biochemistry and Cytogenetics.	Liquid scintillation counter, Gamma counter, Ultra centrifuge, Plasma-2000 spectrometer, UV spectrophotometer, X-ray machine, High speed refrigerated centrifuge.
42.	Department of Botany, Delhi University.	1985-1986	Biology of reproduction, plant physiology, Molecular Biology	Growth chambers, Liquid scintillation counter, Densitometer, Polarizing microscope.
43.	Department of Botany, Banaras Hindu University.	1985-86	Algology and Ecology	Amino-acid analyser, GLC, C,N,H-analyser, High-voltage Electrophoresis.
44.	School of Marine Sciences, Cochín University.	1985-86	Costal and Estuarine, Oceanography and Coastal water and mud banks.	Electron microscope, Liquid scintillation counter scintillation balance, Differential thermal analyser, X-ray diffraction analyser, C,N,H analyser, Proton precision magnetometer.

Appendix XII (a) (Contd.)

<i>S. No.</i>	<i>Name of the Department/ University</i>	<i>Year of Support</i>	<i>PG Education and Research (Thrust Areas)</i>	<i>Major Equipment provided</i>
1	2	3	4	5
45.	Molecular Bio-physics Unit, Indian Instt. of Science, Bangalore.	1985-86	Bio-Molecular structure and interaction.	Rotating anode, X-ray generator, Micro processor controlled light resolution CD spectrometer, Protein sequenator, Liquid scintillation counter.
46.	Department of Bio-chemistry M.S. University	1986-87	Nutrition and Nutritional Bio-Chemistry. Neurochemistry.	Spectrophotometer, Refrigerated & ultra-centrifuges, Liquid scintillation counter.
47.	Department of Bio-Chemistry Lucknow University	1987-88	Plant Bio-chemistry and Enzymology	Spectrofluorimeter, Super speed centrifuge, refrigerated Ultrascan laser densitometer, Total chromatographic system.
48.	Department of Bio-Chemistry Calcutta University	1987-88	Nutrition Bio-chemistry and Microbiology, Physiology	Ultracentrifuge, Refrigerated centrifuge, HPLC, Liquid scintillation counter, Gamma counter with minigamma & RIA.
49.	Department of Botany Patna University	1987-88	Mycology, Pathology & Algae.	TEM, High speed centrifuge, UV/VIS spectrophotometer-cum-scanner, DNA sequencing unit, Fermentation vessel with controls.
50.	Department of Botany Bhagalpur University	1987-88	Mycotoxicology, & Environmental Biology.	I yoph lyzer, Midget electrophoresis with laser densitometer, HPLC, Flow injection analysis system.
51.	C.A.S. in Botany University of Madras	1987-88	Mycology, Plant Pathology and Algae.	UV-VIS spectrofluorimeter, Ultratome, Liquid scintillation system, Dissolved oxygen monitor, Ultrasonic disintegrator.
52.	Department of Marine Biology Annamalai University	1987-88	Marine Microbiology & Toxicology	HPLC, Microbial identification system, Plasma spectrophotometer, High speed refrigerated centrifuge.
53.	Department of Zoology Poona University	1987-88	Only postgraduate teaching	Electron microscope with other accessories and photographic unit.
54.	Department of Zoology Gujarat University	1987-88	Cell & Radiation Biology	Chromosome work station for automatic funding, counting, karyotyping, Binocular microscope, Interactive Image analyser, MCP control unit for scanning.
EARTH-SCIENCES				
55.	Department of Geology, Presidency College, Calcutta.	1984-85	Study of Crustal evolution and metalogenesis in some precambrian sheild.	ICPL, Thermal Ionisation mass spectrometer.
56.	Department of Geology, Gauhati University.	1984-85	Petrology (Sedimentary, metamorphic, Igneous and coal)	AAS with tubes, Flame photometer, Image analyser with photomicroscope projection attachment.
57.	Department of Geology, Kumaon University.	1984-85	Geophydrological, geo-morphological and environmental investigation of the Gaula river in the outer lesser Himalaya, Natural resources and environmental degradation, Assessment through remote sensing of the outer range of lesser Himalaya	DTA/DTG, Additive Colour viewer, Transflexscope (APT-1 type)

Appendix XII (a) (Contd.)

S. No.	Name of the Department/ University	Year of Support	PG Education and Research (Thrust Areas)	Major Equipment provided
1	2	3	4	5
58.	Department of Gology, MS University of Baroda.	1984-85	Quaternary Geology	AAS, EDX qualitative and quantitative analyser (attachement to the SEM), LKB liquid scintillation counters (for C14 & H3), Digital type resistivity meter, Portable drilling unit for sample collection.
59.	Department of Earth Scs. University of Roorkee.	1984-85	Engg. Geophysics, Engg. Geophydrology, Engg. Geology.	Mobile laboratory, ICPL, Spectral data analyser.
60.	Department of Geophysics, Osmania University.	1985-86	Exploration Geophysics.	Pulse EM system, Multi sensor well logging unit (Truck mounted with sensor).
61.	Department of Geology, Jadavpur University.	1984-85	Economic Geology, Petrology, Minerology and Geo-Chemistry.	ICP unit, DTA/TGA.
62.	Department of Geology Panjab University	1986-87	Exploration Geology and Geo-Chemistry, Himalayan Geology	Stereoscopic of inocular microscopes, ICPS, Mass spectrometer.
63.	Department of Geology University of Mysore	1987-88	Paleontology & Geochemistry of of Precambrian rocks.	Microscopes, Electron probe microanalyser with attachment, Chiller, UPS, Logitech (a)
64.	Department of Geology Banaras Hindu University	1987-88	Micro-paleontology, Stratigraphy	SEM* with accessories
65.	Department of Applied Geology Indian School of Mines Dhanabad.	1987-88	Structural Geology & Mineral exploration	XRD with Texture Goniometer, ICP sequential spectrometer, Logitech section cutting & polishing machine, Rock strength testing machine.

MATHEMATICS

66.	Department of Maths, Panjab University.	1984-85	Number theory, Algebra, analysis (Pure Maths, deptt), Magneto hydrodynamics (Applied Maths Deptt.)	—
67.	Department of Mathematics, Ramanujan Instt., Madras University.	1985-86	Analysis, Algebra, Geometry, Topology.	—
68.	Department of Mathematics University of Delhi	1987-88	—	—
69.	Department of Statistics Poona University	1987-88	—	—
70.	Department of Maths & Statistics, University of Allahabad	1987-88	—	—

ENGINEERING/TECHNOLOGY

71.	Department of Civil Engg. University of Roorkee.	1985-86	Transportation Engg., Environmental Engg., Remote Sensing and Photogrammetric Engg.,	Temperature and humidity control system for transporation laboratory, Multipurpose mobile laboratory, Terrestrial plotter with digital read-out, Zoom transferoscope.
72.	Department of Civil Engg., Indian Instt. of Science, Bangalore.	1985-86	Hydromechanics and water resources.	Tri-axial and consolidation testing facility, differential thermal analyser and surface area measuring device, Laser Doppler anemo.meter, Dynamometer turbine, Calcorup plotter.

Appendix XII (a) (Contd.)

<i>S. No.</i>	<i>Name of the Department/ University</i>	<i>Year of Support</i>	<i>PG Education and Research (Thrust Areas)</i>	<i>Major Equipment provided</i>	<i>S. No.</i>
1	2	3	4	5	1
73.	Department of Chemical Engineering, Anna University.	1984-85	Process Development, Transport processes, Crystal Growth	GC, AAS, HPLC, Modular crystal growth unit, Rotary drier complete with drive, tilting arrangement, electrically heated and with blower.	84.
74.	Deptt. of Chemical Tech. Division of Chemical Engg., University of Bombay.	1984-85	Multiphase reactions, Multiphase reactors, Separation processes.	Fourier transform infrared, Liquid nitrogen plant, Core facilities for membrane processes, Laser-Doppler anemometer.	
75.	Department of Electrical Engineering, Indian Instt. of Science, Bangalore.	1984-85	Power Electronics & Drives, Remote sensing, Signal & image processing,	Minicomputer system, Logic Analyser, Current transducers, Torque and Speed transducers, High resolution VCR with colour camera and colour monitor, Onboard power supply for the VCR and camera, RGB video digitizer, Expansion of the image processing system.	85.
76.	Department of Electrical Engineering, Roorkee Univ.	1985-86	Measurement and instrumentation with an emphasis on Industrial instrumentation and power systems, process instrumentation.	Multiuser microprocessor development system, General purpose data acquisition system, computer with peripheral attachment, power system stimulator with relays.	86.
77.	Department of Electronics Engineering, Instt. of Technology, Banaras Hindu University	1984-85	Microwave Engineering, Communication system Engineering.	Signal generator built-in doubler, Automatic scalar network analyser, Ultra high vacuum system, Suction pump and turbomolecular pump having a mass analyser and ovening facility, Hydrogen plant with molecular gas purifier, Contactless resistivity measurement equipment.	87. 88.
78.	Deptt. of Electrical Communication Engineering, Indian Instt. of Science, Bangalore.	1984-85	Computer-software, hardware and optical communication, digital circuits.	32-bit minicomputer, Lasers and accessories, Fiber-optic test-set-up, Programmable digital test and measuring instruments.	
79.	Deptt. of Electronics Engineering, Roorkee University.	1985-86	Communication systems and control and guidance (with an emphasis on pictures and speech processing and digital control)	Spectrum analyser, Digital picture storage system with camera and monitor, 16-bit microprocessor development system, Digital network analyser.	89.
80.	Deptt. of Mech. & Ind. Engg. Roorkee University	1985-86	CAD/CAM, welding engineering, Refrigeration and air-conditioning.	CNC/Milling Machine, CAD/CAM facility, 2-D/3-D drafting system, solid & surface modelling & manufacturing, 6-axis Robot, Drafting plotter.	90.
81.	Department of Production Engineering, Jadavpur University,	1985-86	Manufacturing systems, Automation and robotics.	CNC-II, Vision system, Auto-Inspect System, Sensors and Actuators.	91.
82.	Department of Metallurgy, Indian Instt. of Science, Bangalore.	1985-86	Mineral processing, Hydro-metallurgy pyro-metallurgy, computer modelling, metallic glasses.	Impact tester, X-ray diffractometer, Lathe & shaping machine, Electro-Chemical measurement console, UV-visible Spectrometer, High-temperature impedance spectrometer, Gas analysis chromatograph, Analytical scanning electron microscope.	92.
83.	Department of Metallurgical Engineering, Banaras Hindu University.	1985-86	Rapid solidification and metallic glasses, Deformation and fracture, phase stability and phase transformation process, metallurgy	Surface area analyser, Instron testing machine, Dilatometer, Quantitative image analyser, High-speed movie camera, Lathe and milling machine.	93.

Appendix XII (a) (Contd.)

S. No.	Name of the Department/ University	Year of Support	PG Education and Research (Thrust Areas)	Major Equipment provided
1	2	3	4	5
84.	Department of Earthquake Engineering, Roorkee University	1984-85	Structural Dynamics, Soil and Rock Dynamics Engineering, Seismology & Seismotectonics.	15T overhead cross with supporting system, High speed and high resolution data acquisition and processing system dedicated to dynamic testing set up including airconditioned housing, Shake table platform with foundations and platforms for model fabrication, Motor set up for controlled power supply for vibration testing/processing of data.
85.	Department of Mining Engg., Indian School of Mines, Dhanbad	1986-87	Rock mechanics and ground control, Mining systems and techniques, Mine environment	Ventilation with word leonard set for speed control, Remote monitor for slacks and fire aross, Acoustics emission equipment for rock noise and fallure, Modern rock blasting facility with high speed camera, Portable coring rig.
86.	Department of Mining Engg., Instt. of Technology, Banaras Hindu University.	1986-87	Mine planning and design, Exploration and Exploitation.	I.C.D. emission spectrometer, Particle size analyser and sinslin-II, Airborn dust measuring unit.
87.	Department of Electrical Engg. Jadavpur University.	1986-87	Power-system control, measurement and instrumentation.	Super micro-computer with multiterminal facilites, real time data-acquisition and local area networking facility, Multichannel Programmable polygraph, image processing systems, Minicomputer,
88.	Centre for Water Resources Anna University.	1987-88	Ground Water Resources and Water Resources Management	Bore hole deep water camera with VCR and accessories, Scaler water quality analyser, AAS. SAS Terrameter Loggerunit and VES software, Exploration rig, Drag balance and Signal conditioner cum balancing unit, Electronic distance meter.
89.	Civil Engineering Department Jadavpur University	1987-88	Structural Engineering Water Resources Management	H & V Shake Tables, Electronic Triaxial, Wind Tunnel with measuring equipment/instruments with micro-computer.
90.	Chemical Engineering Department, Indian Institute of Science	1987-88	Multiphase phenomenon	Computer system Video System, Haake Viscometer, HPLC, Pressure reactor, Laser holograph, Minimax polymer evaluation system.
91.	Electronics and Communication Department, Cochin University of Science and Technology	1987-88	Microprocessor application & Microwave Antennas	Image Scanner, CAD System (PCB design system), LAN System, RF network analyser Polar display with aumillary power supply, Board band microwave units, Microwave frequency counter.
92.	Pharmaceutical Sciences Department Panjab University	1987-88	Pharmaceutical Chemistry and and Pharmacology.	HPLC, NMR, IR, UV-Double Beam Spectro-photometer, Precision Polarimeter, Computerised animal activity monitor with accessories, Electromagnetic blood flow meter
93.	Metallurgical Engineering Department Roorkee University	1987-88	Metal casting Technology	Vacumm induction melting Unit: Capacity 5kg. Vacuum 10-5Torr., Dissolved gas analyser (O,N,H), Water testing facility, Corrosion meter, chamber and potentiostat.

APPENDIX-XIII
Universities/Institutions Supported under the Programme of Super
Conductivity during 1987-88

1. Aligarh Muslim University
 2. Allahabad University
 3. Andhra University
 4. Anna University
 5. A.P.S. University
 6. Banaras Hindu University
 7. Bangalore University
 8. Calcutta University
 9. Cochin University of Sc. & Tech.
 10. Goa University
 11. Hyderabad University
 12. Jadavpur University
 13. Jiwaji University
 14. Kalyani University
 15. Madras University
 16. Madurai Kamraj University
 17. M.S. University of Baroda
 18. Marathwada University
 19. North Bengal University
 20. Poona University
 21. Punjabi University
 22. Rajasthan University
 23. Saurashtra University
 24. Shivaji University
 25. Sri Venkateswara University
 26. Utkal University
 27. Indian Institute of Science Bangalore
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APPENDIX XIV (a)
List of Subjects (Category 'A') for which Junior Research Fellowship
Examination was held on 20th September 1987

<i>Code No.</i>	<i>Name of the Subject</i>
1	Economics
2	Political Science
3	Philosophy
4	Psychology
5	Sociology
6	History
7	Anthropology
8	Commerce
9	Education
10	Social Work
11	Defence Studies
12	Home Science
13	Maithili
14	Bengali
15	Hindi
16	Kannada
17	Malayalam
18	Oriya
19	Punjabi
20	Sanskrit
21	Tamil
22	Telugu
23	Urdu
24	Arabic
25	English
26	Linguistics

APPENDIX XIV(b)

List of Subjects (Category 'B) for which Junior Research Fellowship Examination was held on 20th September, 1987

<i>Code No.</i>	<i>Name of the Subject</i>	<i>Code No.</i>	<i>Name of the Subject</i>
27.01	Adult Education	27.37	Dance
27.02	Andragogy	27.38	Dramatic Arts
27.03	Physical Education	27.39	Fine Arts
27.04	Work Education	27.40	History of Arts
27.05	Business Administration/Management	27.41	Drawing & Painting
27.06	Industrial Relations Personnel Management	27.42	Indian Culture
27.07	Management	27.43	Museology
27.08	Marketing	27.44	Archaeology
27.09	Personnel Management	27.45	Chinese
27.10	Arab Culture	27.46	French
27.11	Islamic Studies	27.47	German
27.12	West Asian Studies	27.48	Persian
27.13	South East Asian Studies	27.49	Spanish
27.14	International Relations	27.50	Russian
27.15	Labour & Social Welfare	27.51	Dogri
27.16	Rural Sociology	27.52	Nepali
27.17	Industrial Relations & Labour Welfare	27.53	Manipuri
27.18	Rural Development	27.54	Kashmiri
27.19	Rural Economics	27.55	Rajasthani
27.20	Co-operation	27.56	Assamese
27.21	Cooperative Management	27.57	Marathi
27.22	Public Administration	27.58	Criminology
27.23	Population Studies	27.59	Devel. Planning and Management
27.24	Demography	27.60	Development studies
27.25	Law	27.61	Resource Development
27.26	Library Science	27.62	Econometrics
27.27	Gandhian Thought	27.63	Comparative Literature
27.28	Buddhist Studies	27.64	Tamilnadu and Indian Literature
27.29	Pali	27.65	Tribal and Regional Language
27.30	Prakrit	27.66	Folk Literature
27.31	Religious Studies	27.67	Jyotish
27.32	Agam	27.68	Navya Nyaya
27.33	Mass Communication	27.69	Navya Vyakaran
27.34	Communicative English	27.70	Sankara Vedanta
27.35	Journalism	27.71	Peace Making
27.36	Music		

APPENDIX-XV

Subject-wise break-up of Successful Candidates at the Examination held on 20th September 1987

Code No.	Name of the Subjects	No. of Successful Candidates
1	Economics	72
2	Political Science	86
3	Philosophy	33
4	Psychology	38
5	Sociology	43
6	History	70
7	Anthropology	15
8	Commerce	37
9	Education	12
10	Social Work	8
11	Defence Studies	6
12	Home Science	12
13	Maithili	3
14	Bengali	10
15	Hindi	52
16	Kannada	6
17	Malayalam	—
18	Oriya	4
19	Punjabi	7
20	Sanskrit	35
21	Tamil	6
22	Telugu	8
23	Urdu	15
24	Arabic	3
25	English	17
26	Linguistics	9
27	Other Subjects (Category B)	199
Total		806

APPENDIX-XVI

List of Science Subjects for which Junior Research Fellowship Examination was conducted jointly by the U.G.C. & C.S.I.R. in March, 1988

Sr. No.	Subject
1	Life Sciences
2	Chemistry
3	Earth, Atmospheric & Ocean Sciences
4	Physics
5	Mathematics
6	Statistics

APPENDIX-XVII

List of Centres of Advanced Study in Humanities and Social Sciences as on 31-3-1988

Sl. No.	Subjects	University/Instt.	Thrust Area(s)
1.	Economics	Bombay University, Bombay	Public Finance and Industrial Economics
2.	Economics	Delhi University, Delhi	Economics of Development and Economic History
3.	Economics	Gokhale Instt. of Politics and Economics, Pune, Poona University, Poona	Agricultural Economics.
4.	Linguistics	Annamalai University, Annamalai Nagar	Dravidian Linguistics
5.	History	Aligarh Muslim University, Aligarh	Medieval Indian History
6.	Sanskrit	Poona University, Poona	Sanskrit Literature
7.	Philosophy	Madras University, Madras	Advaita and Allied System of Philosophy.
8.	Education	M.S. University of Baroda, Baroda	Educational Research
9.	Psychology	Utkal University, Bhubaneswar	Educational, Psychology, Social Psychology
10.	Sociology	Delhi University, Delhi	Sociology
11.	Philosophy	Jadavpur University, Jadavpur	(i) Theory of knowledge & Reality Indian & Western (ii) Logic & Languages-Indian & Western (iii) Ethic, Religion, Social & Political Philosophy Indian & Western (iv) Philosophy of Mind. (i) Advanced Anthropological theory & Methodology (ii) Macro-Analysis, Quantification methods & System Analysis (i) Applied and Experimental Social Psychology (ii) Organisational Psychology
12.	Anthropology	Ranchi University, Ranchi	
13.	Psychology	Allahabad University	
14.	Linguistics	Osmania University	Economics of Planning
15.	Archaeology	Deccan College	Indian Ar- chaeology

APPENDIX-XVIII

List of Departments of Special Assistance in Humanities and Social Sciences as on 31.3.88

Sl. No.	Subject	University/Instt	Thrust Area(s)
1.	Economics	Andhra University	(i) Agricultural Economics Co-operation (ii) Regional and Urban Economics (iii) Public Economics
2.	do	Calcutta University	(i) Urban Economics
3.	do	Punjab University	(i) Regional Economics (ii) Economics of Socialism
4.	do	Presidency College	(i) Indian Economics
5.	do	Osmania University	
6.	do	Sri Venkateswara University	(i) Labour Economics (ii) Agricultural Economics
7.	do	Madras University	Economics of Applied Welfare and Applied Development
8.	do	M S University of Baroda	(i) Economics of Education and Human Resources
9.	History	Patna University	Socio-Economics History of Medieval India with special emphasis on urban problems
10.	do	M S University of Baroda	(i) Medieval Archaeology and West India (ii) Medieval Art. Archaeology Epigraphy Numismatics
11.	do	Allahabad University	(i) Socio Economic History of India (ii) Archaeology
12.	do	Calcutta University	(i) Economic History of Modern India (ii) Modern Indian History with reference to Agrarian History, Social History and Intellectual History
13.	do	Mysore University	(i) Pre-Modern and Modern South Indian History with particular reference to socio-economics History of the region.
14.	Philosophy	Rajasthan University	(ii) Logic and Philosophy of Science (ii) Indian Philosophy (iii) Philosophy of Law
15.	Pol. Science	Rajasthan University	Indian Political Tradition and Contemporary political structure and processes in India.
16.	do	MS University of Baroda	(i) International relations theory/ International Political Economy/World Over Studies (ii) Comparative foreign policy Studies with particular emphasis on Indian Foreign Policy analysis.

APPENDIX-XVIII (Contd.)

List of Departments of Special Assistance in Humanities and Social Sciences as on 31.3.88

<i>Sl. No.</i>	<i>Subject</i>	<i>University/Instt.</i>	<i>Thrust Area(s)</i>
			(iii) International organisations and Contemporary projected dimension of the International legal order.
			(iv) Strategic studies/defence analysis. Gandhian analysis and peace research studies.
17.	Sociology	Punjab University	(i) Development Studies Urban Studies
			(iii) Population Studies.
18.	do	Ravi Shankar University	Continuity change in folklore and traditional culture in the following aspect
			(i) Study of traditional folk culture
			(ii) Study of elite tradition
			(iii) Dynamics of Indian Society.
19.	Gujarati	SNDT Women's	(i) Modern Gujarati literature.
20.	Hindi	SP University	(i) Linguistic and linguistic approach to literature.
			(ii) Comparative literature.
			(iii) Drama and Dramaturgy.
21.	Bengali	Burdwan University	(i) Language and culture of Rarh.
			(ii) Comparative study of the literature of Eastern Indian Languages.
			(iii) Modern Bengali Poetry structural Stylistics study.
			(iv) 19th century Bengali literature.
22.	Kannada	Mysore University	(i) Comparative literature.
			(ii) Classical studies.
			(iii) Folklore.
23.	Philosophy	B.H.U.	(i) Different School of Indian Philosophy in context of Indian Culture.
			(ii) Indian Region with a comparative orientation.
			(iii) Philosophy of language Grammar.
24.	Philosophy	Visva Bharati University	(i) Philosophy of Arts & Culture
			(ii) Metaphysics and religion.
25.	Art History and Aesthetics	M.S. University of Baroda	(i) Indian & Western Arts with Special reference to Vashtushastra and vastushilpa
26.	Commerce	Aligarh Muslim University	Entrepreneurial Studies in Backward Regions and Weaker Section.
			(ii) Energy and Water Management
27.	Commerce	Allahabad University	(i) Finance and Accounting
			(ii) Public Enterprise Management
			(iii) Marketing.

APPENDIX-XVIII (Contd.)

List of Departments of Special Assistance in Humanities and Social Sciences as on 31.3.88

Sl. No.	Subject	University/Instt.	Thrust Area(s)
28.	Commerce	Andhra	Investigation of the Problem of Local Industries in A.P. State
29.	Commerce	Banaras Hindu	Corporate Studies, Banking Insurance & Finance
30.	Commerce	Calcutta	(i) Accounting & Finance (ii) Economic Environment and Human Resources Development
31.	Commerce	Delhi	(i) Accounting and Finance (ii) International Business (iii) Organisation Behaviour/Human Relations
32.	Commerce	Gauhati	(i) Rural Development (ii) Accounting & Finance
33.	Commerce	Rajasthan	(i) Accounting & Business Data Processing (ii) Rural Management (iii) Banking & Institutional Finance
34.	Economics	Jadavpur	Regional Economic Studies with Special emphasis on (a) Trade & Industry (b) Transport Energy
35.	Economics	Marathwada	(i) Regional Development (ii) Agricultural Economics (iii) International Economics
36.	Pol. Science	Calcutta	Indian Politics with Special reference to Regional Politics
37.	Pol. Science	Delhi	(i) Indian Political Studies (ii) Peace Studies (iii) Political theory (iv) Politics & Developing countries (v) Development Administration in India
38.	Pol. Science	Jadavpur	(i) International Relations (ii) Defence & Strategic Studies
39.	History	M.S. Univ. of Baroda	Indian and Western Art with Special reference to Vashtushastra and Vastushilpa.
40.	Philosophy	Delhi	i) Indian Logic & Epistemology including the philosophy of language. ii) Social Philosophy with special emphasis on Indian thinking.
41.	Philosophy	Panjab.	i) Social Philosophy including the Socialistic thought in the context of Indian social reality.
42.	Philosophy	Utkal	i) Analytic Studies of basic values. ii) Analytic Studies of basic concept in Indian Philosophy.
43.	Sociology	J.L. Nehru	i) Sociology of Development & Modernisation ii) Sociology of Profession & Professionalisation iii) Sociology of Social movement & Mobilization. iv) Sociology of Agrarian structures & Processes

APPENDIX-XVIII (Contd.)

List of Departments of Special Assistance in Humanities and Social Sciences as on 31.3.88

<i>Sl No.</i>	<i>Subject</i>	<i>University/Instt.</i>	<i>Thrust Area's)</i>
			v) Studies of marginal group, minorities and ethnic communities Sociology of Development
44.	Sociology	Poona Univ.	
45.	Education	M.P. Univ.	i) Educn. of the disadvantaged ii) Educational Technology iii) Modalities of Training college teachers.
46.	Education	Kurukshetra	i) Educational Management ii) Educational Technology
47.	Education	Kerala	Studies in Learning Curriculum and Education Technology
48.	Psychology	Delhi	i) Cognitive Processes ii) Applied Social Psy.
49.	Psychology	Gorakhpur	i) Environment & Human Development ii) Experimental Theoretical Psy.
50.	Anthropology	Utkal	Anthropology of Regional Development with Special reference to Orissa.
51.	Malayalam	Kerala	Not mentioned.
51.	Linguistics	Delhi	(i) Theoretical Linguistics (ii) Sociolinguistics (iii) Applied Linguistics
52.	Linguistics	Deccan Coll.	(i) Experimental Phonetics and Phonology (ii) Grammer & Semantics of South Asian Linguistics
53.	Sanskrit	Jadavpur	(i) Literature & Literary Criticism and Philosophy of Language (ii) Indian Philosophy
54.	Comparative Literature	Jadavpur	(i) Comparative Indian Litt. (ii) The Third World Litt. (iii) Translation (iv) East West Literary Relation
55.	Urdu	Kashmir	(i) Culturology of Urdu Litt. with special reference to Kashmiri language and literature (ii) Urdu Journalism and mass media
56.	Telugu	Sri Venkateswara	(i) Folkloristics Studies (ii) Comparative Study of South Indian Literature
57.	Tamil	Madurai Kamraj	(i) Indian Comparative Literary Studies (ii) Tamil Nadu Folklore Studies (iii) Regional Mass Communication

APPENDIX XIX

List of Departmental Research Support Projects in Humanities and Social Sciences as on 31.3.88

Sl. No.	Subject	University/Instt.	Thrust Area(s)
1.	Marathi	Marathwada	(1) Ancient Literature (2) Modern Literature (3) Folk Literature
2.	Oriya	Sambalpur	(1) Folk Literature (2) Comparative Literature (3) Modern Literature
3.	Assamese	Gauhati	(1) Assamese Language, Culture and Literature including study of dialects, folklores and manuscripts
4.	Music and Musicology	B.H.U.	1) Hindustani Music Vocal and Instrumental 2) Melodic Analysis
5.	Education	S.N.D.T. Women's	(i) Teacher Education (ii) Educational Psychology (iii) Educational Technology (iv) Technology of teaching and Management
6.	Philosophy	Hyderabad	(i) Philosophy of language, w.s.r.t. Willgonatein (ii) Philosophy of Religion-Indian Approaches
7.	Philosophy	N.E.H.U.	Rationality, justification and Tribal thought
8.	Education	South Gujarat	Educational Technology
9.	Anthropology	Calcutta	(i) Special Anthropology
10.	Anthropology	Lucknow	(ii) Morphological genetics characters in Physical Anthropology
11.	Geo Politics	Panjab	(i) Systematic Study and formulation of theoretical aspects of Geopolitik. (ii) Survey and Analysis of the geopolitics of Asia, Africa, Australia and Indian Ocean (iii) Examination of the Geopolitics of the Indian States.
12.	Pol. Science	Osmania	(i) Political Economy of India (ii) State Politics in India
13.	History	Garhwal	(i) Multi disciplinary Archaeological studies in Mid Central Himalaya (ii) The People and their response to material and ideation