

SRU as TAC-DCSW approved projects: some others were recently carried out in collaboration with the Agricultural Science Unit, while a few other projects were funded by important external agencies approved by ISI and Government of India. A special initiative has been recently taken to begin the computer processing of the huge socio-economic data collected and stored in Giridih since the days of pioneering field surveys in the sixties involving more than 1 lakh filled-in questionnaire schedule. This task was recommended by the ISI Council's Committee on Giridih which was unanimously accepted by the ISI Council.

Statistical Quality Control and Operations Research Division

1. Introduction

The basic objective of the Division is to propagate the use of SQC, OR and allied management techniques for controlling loss and cost, improving quality, augmenting productivity in Indian Industry. This is realised through academic programme, consultancy service, inplant and general training courses for people from Industry and research in the methods and procedures of quality control and allied techniques.

2. Academic Programme

The Division is running a two year M.Tech. course to turn out professionally competent specialists for Industry. At present 17 Engineering graduates and 10 M.Sc.(Stat) students are attending the course. The Division also offers a Specialist Development Programme (SDP) to provide career in industry through on the job training and guided development. Besides, evening courses are organised at Bangalore, Hyderabad and Madras.

3. Consultancy Service

The Division has earned a reputation for providing consultancy service in all areas of Quality Management and Productivity. At present 136 organisations through out the country are taking services of the Division. Besides these, the different SQC & OR units are vigorously pursuing Quality System work related to ISO 9000 certification and providing guidance in this area to over 60 organisations. About 22 organisations have already been awarded international certificate in line with ISO 9000 quality assurance system standard and another 25 organisations are expected to be certificated in near future.

4. ISO 9000 Survey 1996

During the last four years, more than 1000 companies have been certified in ISO 9000 Quality Assurance System standard. The SQC & OR Division has started conducting a survey to evaluate the degree of competitive edge which the certified companies have been able to gain.

5. Quality Improvement Projects Highlights

SQC & OR unit Calcutta initiated steps for identification of major business processes where significant improvement in terms of reducing cycle time or complexity of work may be obtained e.g. process of order filling starting from obtaining customers order to despatching to customer, or process of procurement starting from raising the purchase order to putting items in store and paying the supplier; realigning the process so as to eliminate all unnecessary activities and also combining activities whenever possible using contemporary information technology and subsequent software support.

The extent of Consultancy, Inplant and General Training Programmes are summarised below.

i)	No. of Industrial units serviced	136
ii)	General Programmes	
	No. of Programmes	28
	No. of Participants	634
iii)	Inplant programmes	
	No. of Programmes	119
	No. of Participants	3648
iv)	Seminar talks	
	No. of programmes	51
v)	No. of promotional visits	92

The details of training programmes and a list of important factories served under consultancy programme are given in Appendix A & B

6. Quality Mission Project (QMP)

Quality Mission Executives, under Quality Mission Project continued their active participation in conducting training programmes and rendering Quality Systems related consultancy services to industries and service organisations. One of the major assignments that Quality Mission Executives had undertaken was Supplier Development Programme for a major multinational, manufacturing refrigerators and washing machines. Forty strategic suppliers for this organisation have been serviced in implementation of Quality Systems and effecting product quality improvements.

During the current year the Quality Mission Executives have rendered service of 842 days in consultancy, 185 in training programmes and have trained 2514 persons at various levels in Industries and service organisations

To equip the Quality Mission Executives, a specially designed 11 day Intensive Training Programme was conducted by the senior faculty of SQC & OR Division.

8 QMEs have been deputed for Lead Assessors Certificate Programme during the current year.

The performance of QMP was reviewed by a committee chaired by Prof. J.K. Ghosh. The committee recommended further continuation of the project for another 5 years and certain changes in the focus. This has been subsequently approved by Govt. of India.

7. Training Course

Tailor made in house programmes to suit the specific requirements of different organisations were conducted for about 260 plants. About 52 short durations course were conducted on Statistical Process Control Techniques and Industrial Experimentation. A large number of appreciation and motivational courses were conducted for workers in regional languages for a few organisations.

8. Research

The research activities of the Division covered areas like sensitivity of S/N Ratios, Inference in Linear Models, Road Traffic noise analysis, symmetric game, Continuous sampling plans, Analysis of

abscorticism in a spinning mill, etc. 28 papers were published, 47 papers were accepted for publication and 13 papers were submitted for publication in different journals.

A monograph on linear models and regression is under preparation by Dr. P. Bhimasankaram. Shri D.K. Manna and Shri A.K. Chakraborti submitted their Ph.D. theses on "CTV minimisation in single machine scheduling" and "Software Quality testing and remedies" respectively. Shri S.K. Neogi has been awarded Ph.D. degree for his thesis on "Some Generalizations of the LCP".

A two day practitioners Researchers Interface Meet was conducted at Calcutta on March 22, 1997 which was attended by 23 Scientists from the Division and invitees from Stat-Math Unit.

9. Other activities

News Letter : Three issues of News letter of the Division were released during April 1996 - March 1997 and circulated to among 1200 persons all over India. It is planned to bring out 4 issues per year.

Winter School : The Winter School was on SQC and Reliability conducted by Dr. D.T. Ghosh at Calcutta, during 17-29 March. The basic objective was to bring together the staff members of the Division and researchers in different universities in a programme that will highlight the existing techniques found suitable for application in industry along with recent developments in the field of SQC and Reliability by the Indian School. 20 participants attended from different universities and colleges and from industry.

Collaboration with other organisations : Collaborative works were undertaken with Kerala Agricultural University, Bharathiar University, University of Pune, IAPQR, NIQR, BIS, CFI, RITES, Productivity Councils, Electrical Research and Development Association.

10. Statistical Survey of Knitwear Industry

The project commenced in September '97 and the project assistant was appointed for duty in October '97. Preliminary discussions were held with Apparel Export Promotion Council (AEPCC) and leading knitwear manufacturers' associations to understand the industry in general and to frame the survey. Accordingly sample questionnaire was prepared and a pilot survey was conducted to validate it. The questionnaire was modified and presently actual survey is being conducted on sample basis.

11. Staff Development Programme

Scientific workers and QMEs attended lead assessor programme on ISO 9000, programmes on Environment System Management, QS 9000, Policy Deployment, Communications and TQM. Besides these SQC & OR Unit, Calcutta and Hyderabad conducted inhouse programmes for the faculty members of the unit.

12. Management Development Centre at Hyderabad

In line with the recommendations of the Sukhatme Committee, work has been initiated for establishing a centre for management development.

Appendix A

Inplant Training Programmes conducted since April 1996

Sl. No.	Topic	Duration (days)	Level of participants	No. of Programs
1.	Statistical Techniques	2	Middle management	8
2.	Statistical Techniques	3	Middle management	1
3.	SQC Techniques	3	Middle management	2
4.	SQC Techniques	6	Middle management	1
5.	Statistical Process Control	1	Middle management	2

6	Statistical Process Control	2	Middle management	7
7	Statistical Process Control	3	Middle management	10
8	Acceptance Sampling	1	Middle management	1
9	Acceptance Sampling	2	Middle management	3
10	Acceptance Sampling	3	Middle management	1
11	Simple Tools of QC	1	Middle management	1
12	New Sevel Tools	1	Middle management	1
13	Design of Experiments	1	Middle management	1
14	Design of Experiments	2	Middle management	3
15	Design of Experiments	5	Middle management	1
16	Tests of Hypothesis	2	Middle management	1
17	Reliability	1	Middle management	1
18	Gauge Capability	1	Middle management	1
19	FMEA	1	Middle management	1
20	FMEA	2	Middle management	1
21	Statistical Techniques for ISO 9000	2	Middle management	1
22	Internal Quality Audit	2	Middle management	6
23	Internal Quality Audit	3	Middle management	4
24	ISO 9000 -Awareness	1	Middle management	2
25	ISO 9000 -Awareness	2	Middle management	2
26	ISO 9000 -Awareness	1	Middle management	1
27	Statistical Techniques	1	Middle management	5
28	Quality Management	1	Top Management	1
29	ISO 9000 - Awareness	1	Top Management	1
30	SPC	1	Top Management	3
31	Process Management	1	Top Management	5
32	Team-Oriented Problem Solving	1	Top Management	2
33	Vendor Quality Assurance	1	Middle Management	1
34	Quality Management	3	Middle Management	4
35	Quality Cost	1	Middle Management	1
36	SQC	4	Middle Management	1
37	Advanced SQC	3	Middle Management	1
38	SPC	3	Engineers	5
39	Quality Management for Material Functions	3	Middle Management	1
40	Quality Management for Engineering Functions	4	Middle Management	1
41	Statistical Methods for Quality Improvement Management Seminar	1	Top Management	1
42	ISO 9000 Awareness Programme	1	Top & Middle Management	3
43	Supplier development programmes	3	Executives from Supplier Organisations	2
44	SQC and DOE	3	Scientists	1
45	Reliability	3	Engineers	1
46	Seven QC tools	2	Middle Management	1

General Training Programmes conducted since April 1996

Sl. No.	Programme Title	Dates	Place	Participants	
				Level	Number
1	Statistical Techniques for Quality	2-4 April 1996	Coimbatore	Middle Management	12
2	Internal Quality Audit	13-15 May 1996	Bangalore	Middle Management	18
3	Half day seminar on TQM, ISO 9000	20 Sept. 1996	Bangalore	From Ghana, Malta, Ukraine, Syria Panama	7
4	Statistical Methods for Reliability Data	2-4 January 1996	Bangalore	Middle Management	21
5	QS 9000 Quality System Requirements and Implementation	6,7,8 January 1997	Bangalore	Middle Management	48

Appendix B

Organisations working for Quality System Certificates (ISO 9000 & QS 9000) with assistance from the Division (during 1996-1997)

Thiagarajar Mills, Madurai . Tata Keltron, Palghat . ITI Ltd., Palghat, KSB Pumps, Coimbatore, PSM Spinning Ltd., Naurite Agro Products Pvt. Ltd., Kinetic Engineering Ltd., Ahmednagar, INDAL, DMW Mines, Kolhapur, RHW Autoliv (India) Ltd., Bangalore, General Optics (Asia) Ltd., Pondicherry, Kirloskar Electric Company, Wind Energy Group, Bangalore, Kirloskar Electric Company, Project Systems Group, Bangalore, Stumpp, Scheule Somappa Ltd., Bangalore, Larsen & Toubro, Calcutta, Metflow, Calcutta, ITC, Calcutta, Peerless Hospital, Coats of India, Calcutta, ICI-Gomia, Initiating Explosives, United Catalysts Indus Ltd., Baroda, Bumper India Pvt. Ltd., Mumbai, INDAL, Alumina Plant, Belgaun, Heavy Alloy Penetrator Project, Ordnance Factory, Anrieh Technik Pvt. Ltd., Madras, T. Abdul Waheed & Co., Ambur, PASIC Pondicherry, RHW (India) Ltd., Bangalore.

Organisations which received other consultancy service from the division (during 1996-97)

WIDIA India Ltd., Hyderabad; Dr. Reddy's Laboratories Ltd.; PSM Spinning Ltd.; Naurite Agro Products Pvt. Ltd., Hyderabad; FGP Ltd., Hyderabad; HMV Ltd., Dumdum; Electro Steel Castings Ltd., Kharda; Hyderabad Industries Ltd., Heavy Engineering Division, Hindmotor; Sunwear Industries, Bangalore; Sunrise Jewellers, Madras; Roots Industries, Coimbatore; KSB Pumps, Coimbatore; Bharat Fritz-Werner Ltd., Bangalore; Boving Fouress Ltd., Hoskote; KAVIKA Ltd., Bangalore; MICO Ltd., Bangalore; Saha Kail Ltd.

Bangalore; BHEL Corporate Quality Assurance, Secunderabad; Engine Valves Ltd., Medchal; SRMT Ltd., Kalsinada; Hewlett Packard (India) Ltd., Bangalore; HMT Machine Tools Division; HMT Diecasting Division; Femtec (India) Ltd., Madurai; Grasim Industries Ltd., Harihar; Grasim Industries Ltd., Mavoor; HAL, Aircraft Division, Bangalore; INDAL, Nanjangud; Rao Insulating Company Ltd., Bangalore; Glowtronics Ltd., Mysore; NVT-QC, Bangalore; RHW autoliv India Ltd., Bangalore; Hical Magnetics Ltd., Bangalore; General Optics (Asia) Ltd., Pondicherry; Electronics Research Ltd., Bangalore; Auma (India) Ltd., Bangalore; Kirloskar Electric Ltd., Rotating Machines Division, Bangalore; Kirloskar Electric Ltd., Transformers Division, Bangalore; Kirloskar Electric Ltd., Unit-3, Bangalore; Kirloskar Electric Ltd., Unit-4, Mysore; Kirloskar Electric Ltd., Unit-2, Hubli; Stumpp, Schuele & Somappa Ltd., Bangalore; HMT Bearings Ltd., Hyderabad; Karnataka Antibiotics Pharmaceuticals Ltd., Bangalore, BPL Ltd., Arekere; TAFE Ltd., Doddaballapur; Modi Xerox Ltd., Rampur; Jaipac India Ltd., Haldwani; Wipro Peripherals, Mysore; Ashapura International Ltd., Bhuj; Gujarat Machinery Manufacturing Ltd., Anand; Anti-friction Bearings India Ltd., Bharuch; Banco Products (India) Ltd., Baroda; SPIC Ltd., Agro Biotech Centre, Coimbatore; ICI-Paints; Electro Steel Casting, Calcutta; Metflow, Calcutta; Andrew Yule, Calcutta; NC Mines, HMV Limited, Calcutta; GEC Alstom India Ltd., Transformer Division, Naini, Allahabad; Technova Imaging Systems Ltd., Talaja; Bharat Electronics Ltd., Talaja; Indian Oil Blending Ltd., Vashi; Indian Oil Blending Ltd., Mumbai; RFL, Calcutta; BPL Ltd., Bangalore; Ispat Alloys Ltd., Balgopalpur; Tata Steel Ltd., Jamshedpur; Tata Refractories Ltd., ICI India, Paints Division, Hyderabad; Nava Bharat Ferro Alloys Ltd., Hyderabad; WIPRO Consumer Products Ltd., Amalner; Maharashtra Seamless Ltd.; FOSROC Chemicals (India) Ltd., Peenya, Bangalore; Asea Brown Boveri Ltd., Corporate Office, Bangalore; Engine Valves Ltd., Madras; Whirlpool India Ltd., Washing Machine Division, Pondicherry; Sundaram Fasteners Ltd., Madras; Kelvinator of India Ltd., Faridabad; FAL Industries Ltd., Plastics Division, Madras; KCP Ltd., Macherla; India Pistons Ltd., Madras; WIPRO Lighting, Aurangabad; Sundaram Industries, Rubber Division, Madurai; Powergear Ltd., Peenya, Bangalore; L & T Product Engineering Group, Bangalore; Institute of Wood Science & Technology, Bangalore.

Library, Documentation and Information Sciences Division

Documentation Research and Training Centre (DRTC), Bangalore

The activities of DRTC have been organised into several programmes, such as (a) Research Programme; (b) Advisory service programme; (c) (i) Extension programme, (ii) Publication programme, (d) Educational and Training programme; (e) Employment information programme; (f) Continuing educational and training programme; and (g) Faculty development programme.

1. Training in Documentation and Information Science

Course leading to "ADIS" Award:

Under its education and training programme, DRTC conducts a course of 24 months duration leading to the award "Associateship in Documentation and Information Science" (ADIS). This award is recognised by the Govt. of India and several other universities as equivalent to a Master's Degree in Library and Information Science. Normally, the entry qualification for ADIS course is a post-graduate degree in "Library and Information Science" (BLISC or its equivalent). Not more than fifteen students are admitted in each academic session of 24 months duration. Applicants are selected based on the admission test and interview.

2. Short term course on Computerised Information Work and Service

Under the sponsorship of the National Information System for Science and Technology (NISSAT) of the award of Scientific and Industrial Research (DSIR), Government of India, New Delhi, DRTC has been conducting a six-week course on "Computer Applications to Library and Information Work" since 1986. Normally, two such courses are conducted during each financial year. However, in the last two years, only one course is being conducted per year.

3. Research activities

The main areas of research in which the different members of the DRTC Faculty were engaged during the period April 1996 to March 1997 are furnished below : (1) The application of the "Colon Classification, ED 7", for the purpose of (a) arranging documents; and for (b) documentation work and service; (2) The study of various method of knowledge representation, such as semantic nets, frames and predicate calculus, etc. (3) The application of the "Modern scientific management techniques" to the planning and management of information systems, centres and services; (4) The study of the methodologies of information analysis and consolidation. (5) The development of bibliometric, scientometrics measures for evaluating the use of library and information services and scientific out put respectively; (6) The preparation of guidelines and actual development of software and application packages for library house keeping operations, such as, circulation control, serial control and acquisition control; (7) Development of Software for OCR and for Multimedia applications.

Externally funded Project Work

1. One of the externally funded projects of DRTC, is the short-term training programme of computer applications to library and information work. It is specially meant for the professionals in the field of information work and services. It is fully financed and sponsored by the National Information systems for Science and Technology by the Department of Scientific and Industrial Research, Govt. of India, New Delhi. Report of this project has already been furnished in Section 2.
2. This is an ongoing NISSAT sponsored project at DRTC. During 96-97 software is being developed. NISSAT is expected to give financial support during 1997-98.
3. This is a NISSAT sponsored project at DRTC. It is on "National Mapping of Science using COMPENDEX CD-ROM Database" under the Scientometrics/Informetrics Programme of NISSAT. Initially it was planned to analyse MATHSCI database. Later based on the NISSAT's request, COMPENDEX database is being taken up.

Libraries

Bangalore

1. Additions to the library during April 1996 to March 1997.

Book Acquisition : During the above period 391 books were added to the library by purchase. 32 books were received on gratis.

Stock position : The total stock position as on 31st March 1997 is as follows :

Books - 14438, Books on Gratis - 968, Bound volumes of Periodicals - 6995, No. of Periodical Subscribed - 261, No. of periodical received on gratis - 10.

2. Technical Processing : About 370 books were classified and catalogued during the period. Nearly 1850 catalogue cards were filed.

3. Circulation Statistics : During the period library facilities were enjoyed by 286 users. 159 of them availed the lending facilities. 6 visiting Professors of different units of ISI were also provided with the lending facilities. A total of about 13686 books and periodicals (including loose issues) were circulated by the library. The in-house use of books and periodicals were around 30000. About 153 inter-library loan transactions were registered.

The membership includes ISI staff, Research scholars, Project assistants, M.Stat. students, M.Tech. students, SDP fellows, DRTC students, Trainees of DRTC short term courses etc.

4. Inter-Library Loan Service : Inter Library Loan facilities were availed by the Indian Statistical Institute Bangalore Centre Library and the Library also extended inter library loan facilities to other libraries.

5. **Reprographic Service :** Library provided 1,45,000 xerox copies to the users during the period April 1996 to March 1997.
6. **Documentation Services :** The following publications were brought out regularly from the library.
 1. Bimonthly additions list of books
 2. Monthly list of current periodicals
 3. Current contents of journals

Calcutta

With the addition of 1125 books and 1085 bound journals to the stock, the total collection of the Library rose to 2,06,124.

1. **Acquisition Unit :** The unit accessioned 1125 books during the period under report, out of which 1000 were purchased and 125 were received on complimentary basis. Out of the purchased books, 86 books were funded out of grants received from the National Board of Higher Mathematics (NBHM). The unit accessioned 235 books purchased under project grants by different units.

2. **Periodicals Unit :** The unit received 798 periodicals out of which 160 were received as gift. 438 against subscription and 200 on exchange arrangement with national and international organisations. 31 journals were subscribed under NBHM grant. It accessioned 1085 journals and completed the technical processing of 1210 journals. 1053 complete volumes of journals were processed for binding. The unit received total 4234 issues of journals. Monthly bulletin for Current Journals were prepared and circulated to the users of the Institute and other organisations.

The OPAC (On-line public access catalogue) of periodical collection has been developed as a part of a project - Identification and Selective Rectification of Gaps in the Periodical Collection of the ISI Library. The data base structure is based on CCF, 2nd edition. Its structure is compatible with INFLIBNET data structure. This database is searchable by title, keyword and class no. etc. The preliminary database has been developed based on information available from the present Card Catalogue.

3. **Circulation & Stack Maintenance Unit :** The unit issued 63955 books and journals to the users on loan and reference. The total membership of the Library is 1767 which includes ISI staff, Research Scholars, Project Assistants, B.Stat. and M.Stat. students, ISEC Trainees etc. as well as outside students and institute members. 1368 readers were given special permission to use the library for a short period. 89 books and journals were borrowed from other libraries and 76 books and journals were loaned to the other libraries under the inter-library loan arrangement.

4. **Reports & Records Unit :** The unit accessioned 195 titles and processed 172 titles. 975 titles were issued to borrowers for reference use during the period. 4 issues of the Quarterly Bulletin of Recent Publications have been brought out.

Development of OPAC of the collection has been initiated with the help of internal staff. The preliminary database will be developed on information available from the Card Catalogue Micro-CDS/ISIS Ver.3.07 has been used for design and development of database. The database structure is based on CCF. The present database consists of approx. 5500 records of Government of India Publications.

5. **Circulating Library :** The Workers' Circulating Library acquired 166 new titles bringing the total collection to 36,298. It issued 22620 books to the members. The Card Catalogue is being revised to provide subject accesses.

6. **Technical Processing Unit :** The unit classified 650 books and catalogued 730 books. The unit issued classified list of current additions to the Library.

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Embryology Unit

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Mukhopadhyay, A., Chattopadhyay, J. and Tapaswi, P.K. : Selective harvesting of a two species fishery model. *Ecological Modelling*.

Social Sciences Division

Economic Research Unit

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Chattopadhyay, M. and Sengupta, A. : Farm size and productivity : A new look at the old debate. *Economic and Political Weekly*.

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Mukherjee, D. : Deprivation reducing income tax function. *Research in Economic Inequality*.

Economic Analysis Unit

- Narayana, N.S.S. : A Review Article on the Book "Political Economy of Foodgrains Marketing in South India" by Barbara Harriss-White. *Indian Journal of Agricultural Economics*.
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Linguistic Research Unit

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- Bandyopadhyay, Debaprasad : Towards a Praxis of Anti Grammar. *Philosophy and Social Action*, 21.
- Bandyopadhyay, Debaprasad : Trigglossia in Bangla. *South Asian Language Review*.
- Bandyopadhyay, Debaprasad : The Crippled Creativity - A Brief Theoretical Perspective. *Language Forum*.
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Planning Unit

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- Sarna, Atul : Indian Exports to European Union in the Emerging Economic Environment. *Asia-Pacific Development Journal*.

Psychology Research Unit

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- Dutta Roy, D. : Personality model of fine artists. *Creativity Research Journal*.

Sociological Research Unit

- Chakrabarti, P. : Who cares for the elderly? A study of health management and care. *Economic and Political Weekly*.

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Statistical Quality Control and Operations Research Division

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Library, Documentation and Information Science Division

DRTC (Bangalore)

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Applied Statistics Division

Applied Statistics Unit

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Planning Unit

Aswal, Naveen and Sen, Arunava : Restricted Domains and the Gibbard - Satterthwaite Theorem, *Social Choice and Welfare Conference*, Maastricht, Netherlands, June, 1996.

Das, Sanghamitra : A Dynamic Structural Model of Exporting Behaviour : Quantifying the Effect of Market Entry Costs and Uncertainty, *India and South Asia Econometric Society Meetings*, New Delhi, December 28 - 30, 1996.

Das, Satya P. : Trade Among Similar Countries and Personal Distribution of Income and Wealth, *India and South Asia Econometric Society Meetings*, New Delhi, December 28 - 30, 1996.

Ramaswami, Bharat : Forecasting Errors in the Absence of Futures Market : The Performance of the Wheat Market in India, *Recent Advances in Quantitative Methods*, Bangalore, March 19 - 20, 1997.

Sanna, Atul and Mehta, P.K. : Prospects of Agro-Exports to European Union in the Emerging Environment, *Conference on Emerging Trends in the Indian Economy*, Amritsar, March 28 - 29, 1997.

Population Studies Unit

Deb Roy, Rama : Female Infanticide in India in a Historical Perspective, *European Social Science History Conference*, Amsterdam, May, 1996.

Psychology Research Unit

Banerjee, S.N. : Innovation in Primary mathematics education - looking back and looking ahead, Calcutta, April 2, 1996.

Banerjee, S.N. : Mathematics education for the low achievers, Calcutta, August 4, 1996.

Basumallick, Tapan Kumar and Mitra, Subir Kumar : Importance of Item characteristic functions and Item information functions in Test design and in Behavioural research, *Symposium on Item Response Theory and Its Applications*, ISI, Calcutta, February 18 - 19, 1997.

Dutta Roy, D. : Psychiatric personality profile similarity among splenectomy, non-splenectomy beta thalassaemic and non thalassaemic children, *20th Indian Social Science Congress*, Visva Bharati, December, 28, 1996 - January 2, 1997.

Dutta Roy, D. : Item Response Theory in Organizational researches : A review, *Symposium on Item Response Theory and Its Applications*, ISI, Calcutta, February 18 - 19, 1997.

Dutta Roy, D. : Statistical Modelling in Self analysis, *Second World Congress for the synthesis of Science and Religion*, Calcutta, January 9 - 12, 1997.

- Ghosh, Anjali : Isolation of motivational profile of trainee women entrepreneurs. *First International Conference of South Asian Association of Psychologists*, Mumbai, December 27, 1996.
- Mitra, Subir Kumar : Concept of Test Equating and Item Banking in Assessment of Learning in Total Literacy Campaign. *Symposium on Item Response Theory & Its Applications*, ISI, Calcutta, February 18 - 19, 1997.
- Mitra, Subir Kumar : Item Banking in Evaluation of DPEP and TLC Programme. *Workshop on Participation in Education in India : Regional Variations*, Dept. of Economics, Jadavpur University, March 3, 1997.
- Roy, Surja Sankar, Bandyopadhyay, Debaprasad, Choudhury, Amitava, Kanungo, Pradipta and Mitra, Subir Kumar : Interference of L1 (Bangla) in L2 (English) Learning in Secondary Classes in W.B. : an IRT Approach. *Symposium on Item Response Theory & Its Applications*, ISI, Calcutta, February 18 - 19, 1997.

Sociological Research Unit

- Chakraborty, Aniruddha : Peasantisation among a semi-nomadic tribal community : A case study on the Birhor of Bhupatipalli, Purulia, West Bengal. *Platinum Jubilee Seminar on Dept. of Anthropology*, Calcutta University, March 8 - 9, 1997.
- Dasgupta, Atis : Ethnic problems and movements for autonomy in Darjeeling. *Golden Jubilee of Anthropological Survey of India*, November 26 - 28, 1996.
- Dasgupta, Atis : The role of Subhas Chandra Bose in the Indian freedom struggle. *Paschimanga Itiha Samsad*, December 21, 1996.
- Dasgupta, Atis : Netaji and the leftist movements. *The Department of Information, Government of Tripura*, January, 5, 1997.
- Dasgupta, Atis : Subhas Chandra Bose and nation-building in India. *Netaji Institute for Assam Studies*, January, 24, 1997.
- Dasgupta, Atis : Subhas Chandra Bose in the South East Asia. *Department of Information & Cultural Affairs, Govt. of West Bengal*, February, 2, 1997.
- Mukhopadhyay, Shyamal : Impact of industrialization on 'peoples' life and living : A study at Haldia, Midnapore, West Bengal. *XVth Indian Social Science Congress at Visva Bharati, Shantiniketan*, December 28, 1996 - January 2, 1997.

Statistical Quality Control and Operations Research Division

- Acharya, U.H. and Mahesh, C. : Winning back Customers Confidence - A Case Study on Application of Design of Experiments to Injection Moulding process. *International Conference on Quality Improvement through Statistical Methods*, Cochin, December 28-31, 1996.
- Chakraborty, A. K. : Modelling Software Reliability. *Conference on Statistics in Quality, Industry and Technology*, NISI, Gaithersburg, MD, U.S.A., May 29 - 31, 1996.
- Chowdhury, K.K. : Quality Engineering in T & D - application of Taguchi Methods in Indian Industries. *National Workshop on Total Quality Control and Management TQCM - 97*, KLE's Society college of Engineering and Technology, Belgaum, March, 1997.

- Pal, B.K. : Developing objective Strategies for Monitoring Multiinput/Single out-put Chemical Process. *International Conference on Quality Improvement through Statistical Methods*, Cochin, December 28-31, 1996.
- Perumallu, P.K. : Process Development for Achieving Uniform Plating Thickness. *International Conference on Quality Improvement through Statistical Methods*, Cochin, December 28-31, 1996.
- Roy Chowdhury, A. : To Establish Process Parameters for Frame Soldering Process. *International Conference on Quality Improvement through Statistical Methods*, Cochin, December 28-31, 1996
- Venkatappaiah, J. . Sensitivity of SN Ratios. Conference on Statistics in Quality, Industry and Technology, NIST, U.S.A., May 29 - 31, 1996.

Computer and Statistical Services Centre

- Nandy, S.C., Mukhopadhyay, K. and Bhattacharya, B.B : Optimal firing problem, *Canadian Conf. on Computational Geometry*, Ottawa, Canada, August 12 - 15, 1996.
- Nandy, S.C. and Mitra, P. : Efficient computation of rectilinear geodesic nearest neighbor in presence of obstacles, *FSITCS-16*, Hyderabad, December 17 - 20, 1996.

8. VISITING SCIENTISTS

A number of distinguished scientists from abroad and India participated in the research, training and other scientific activities of the Institute during the year. Some of them came to the Institute on invitation and spent fairly long periods in the Institute to assist in the regular research and teaching programmes, while others came for short periods and gave lectures and seminars. Most of them were available for consultation by the faculty members of the Institute. Names of the Visiting Scientists are indicated below :

1. Achutnan, N., Curtin University of Technology, Australia, January 15-17, 1997, *Stat-Math Unit, Calcutta.*
2. Athreya, K.B., University of Iowa, USA, April 2, 1996, *Stat-Math Unit, Calcutta.*
3. Bajaj, Kapil, University of California, Santa Barbara USA, August 26, 1996, *Physics and Applied Mathematics Unit, Calcutta.*
4. Banerjee, Satyapratim, Boston University, USA, July 31 - September 3, 1996, *Economic Research Unit, Calcutta.*
5. Barnes, B.A., University of Oregon, USA, April 24, 1996, *Stat-Math Unit, Calcutta.*
6. Basu, S.K., Indian Institute of Management, Joka, March 1996 - April 1997, *Stat-Math Unit, Calcutta.*
7. Bera, Anil, University of Illinois, Urbana-Champaign, USA, January 27 - February 21, 1997, *Economic Research Unit, Calcutta.*
8. Beteille, Andre, Professor of Sociology, Delhi University, July 7-8, 1996, *Sociological Research Unit, Calcutta.*
9. Bhattacharya, Mohidas, International School of Dravidian Linguistics, Trivandrum, October 1996, *Computer Vision and Pattern Recognition Unit, Calcutta.*
10. Bhattacharyya, Budhadeb, Formerly of St. Xaviers College, Calcutta, February 25, 1997, *Physics and Applied Mathematics Unit, Calcutta.*
11. Blaikie, Piers, School of Development Studies, October 27 - December 14, 1996, *Agricultural Sciences Unit, Calcutta.*
12. Bovas, Abraham, Institute of Improvement in Quality and Productivity, University of Waterloo, Canada, January 6-8, 1997, *Statistical Quality Control and Operations Research Unit, Bangalore.*
13. Browne, Maricad, Department of Information Studies, Faculty of Humanities and Social Science, University of Technology, Sydney, February 9 - 13, 1997, *Documentation Research and Training Centre, Bangalore.*
14. Cameroon, John, School of Development Studies, UEA, U.K., February 3 - 5 and March 4 - 8, 1997, *Agricultural Sciences Unit, Calcutta.*

15. Chakraborty, G., Dept. of Software Engineering, University of Aizu, Japan, December 19, 1996 - January 24, 1997, *Machine Intelligence Unit, Calcutta.*
16. Chakrabarti, A., Department of Mathematics, Indian Institute of Science, Bangalore, September 9 - 12, 1996, *Physics and Applied Mathematics Unit, Calcutta.*
17. Chatterjee, Niladri, University College of London, May - June, 1996, *Electronics and Communication Sciences Unit, Calcutta.*
18. Das, M.N., Delhi, December 6, 1996, *Stat-Math Unit, Calcutta.*
19. Das, Shubhabrata, 1996-1997, *Applied Statistics Unit, Calcutta.*
20. Datta, M., University of Calcutta, December 1, 1996 - March 31, 1997, *Stat-Math Unit, Calcutta.*
21. Debnath, L., Senior Fulbright Fellow, Department of Mathematics, University of Central Florida, USA, September 23 - 25, 1996 and October 3 - 30, 1996, *Physics and Applied Mathematics Unit, Calcutta.*
22. Evans, D.V., School of Mathematics, University of Bristol, UK, December 7 - 14, 1996, *Physics and Applied Mathematics Unit, Calcutta.*
23. Fischer, G.H., University of Vienna, Austria, February 21, 1997, *Stat-Math Unit, Calcutta.*
24. Ghosh, S.K., University of Connecticut, USA, June 14, 1996, *Stat-Math Unit, Calcutta.*
25. Ghosh, P.P., St. Xavier's College, Calcutta, October 7, 1996, *Stat-Math Unit, Calcutta.*
26. Gowda, M.S., Professor, University of Maryland, Baltimore, *Statistical Quality Control and Operations Research Unit, Madras.*
27. Grossman, Gene, Princeton University, December 18 - 24, 1996, *Planning Unit, Delhi.*
28. Gupta, J.C., January 28 - February 6, 1997, *Stat-Math Unit, Calcutta.*
29. Gupta, B.K., North-Eastern Hill University, August 1996, *Stat-Math Unit, Calcutta.*
30. Jayakumar, K., R.O., State Income Division, Directorate of Economics and Statistics, Govt. of Kerala, June 10 - July 7, 1996, *Stat-Math Unit, Calcutta.*
31. Jayakumar, K., Department of Statistics, University of Calicut, October 25-28, 1996, *Stat-Math Unit, Bangalore.*
32. Jayasree, S., September 10, 1996 - March 31, 1997, *Stat-Math Unit, Calcutta.*
33. Jones, Palmer Richard, School of Development Studies, May 27 - 31, 1996, *Agricultural Sciences Unit, Calcutta.*
34. Hemming, Richard, International Monetary Fund, New Delhi, Office, November 5, 1996, *Economic Research Unit, Calcutta.*
35. Kam, S., Social Science Division, IRRJ, Philippines, March 11 - 17, 1997, *Agricultural Sciences Unit, Calcutta.*
36. Kiryev, Alexi, International Monetary Fund, U.S.A. November 5, 1996, *Economic Research Unit, Calcutta.*

37. Kolar, Vaclav. Academy of Sciences of the Czech Republic, Prague, November 8 -25, 1996, *Physics and Applied Mathematics Unit, Calcutta.*
38. Kalluri, Bharat. University of Hartford, CT, USA, February 1997, *Economic Analysis Unit, Bangalore.*
39. Krishnaji, N., Centre for Economics and Social Sciences, Hyderabad, March 1997, *Economic Analysis Unit, Bangalore.*
40. Kulshrestha, M., Indira Gandhi Institute of Development Research, Bombay, August 4-9, 1996, *Economic Research Unit, Calcutta.*
41. Madan, S., I.I.T., Kanpur, December 5-14, 1996, *Stat-Math Unit, Calcutta.*
42. Maitra, A., University of Minnesota, USA, July 26, 1996, *Stat-Math Unit, Calcutta.*
43. Majek, Alan, California Institute of Technology, USA, September 17, 1996, *Physics and Applied Mathematics Unit, Calcutta.*
44. Majumder, Sekhar, National Aeronautics Laboratory, Bangalore, March 3, 1997, *Physics and Applied Mathematics Unit, Calcutta.*
45. Marcus, M., City University of New York, January 13 - 31, 1997. *Stat-Math Unit, Calcutta.*
46. Marcus, M.B., City University of New York, USA, February 5-6, 1997, *Stat-Math Unit, Bangalore.*
47. Mehta, Madan Lal, Saclay, France, September 18, 1996, *Stat-Math Unit, Bangalore.*
48. Mendelsohn, Hendry, Information Resource Officer, United States Information Services, New Delhi, September 28, 1996, *Documentation Research and Training Centre, Bangalore.*
49. Mohari, A., August 19, 1996 - February 18, 1997, *Stat-Math Unit, Calcutta.*
50. Morales, Michael, Director of the Colorado Plateau Institute of Paleontology and Curator of Paleontology, Museum of Northern Arizona, Flagstaff, Arizona, U.S.A., March 12 - 24, 1997, *Geological Studies Unit, Calcutta.*
51. Mukherjee, H., North-Eastern Hill University, January 5-8, 1997, *Stat-Math Unit, Calcutta.*
52. Mukherjee, R., Indian Institute of Management, Joka, March 1996 - April 1997, *Stat-Math Unit, Calcutta.*
53. Mukherjee, G., S.P.I.C., Madras, April 03, 1996, *Stat-Math Unit, Calcutta.*
54. Narahari, Dept. of Computer Science and Automation, IISc, Bangalore, September 12, 1996, *Stat-Math Unit, Bangalore.*
55. Narayan, Sivaram Krishnaan, Central Michigan University, USA, May 22-24, 1996, *Stat-Math Unit, Bangalore.*
56. Nobel, Rein C., Faculty of Economics and Econometrics, Vrije Universiteit, Amsterdam, Netherlands, January 14, 1997, *Physics and Applied Mathematics Unit, Economic Research Unit, Calcutta.*
57. Pal, Nabendu, University of Southwestern Louisiana, USA, July 31, 1996, *Stat-Math Unit, Calcutta.*
58. Pattanaik, D.P., Director, CILL, Mysore, May 31, 1996, *Computer Vision and Pattern Recognition Unit, Calcutta.*

59. Peeters, B.M.B., University of Twente, Netherlands, *Statistical Quality Control and Operations Research Unit, Madras.*
60. Prajapat, J., TIFR, Bangalore, August 29, 1996, *Stat-Math Unit, Bangalore.*
61. Puentes, Hernan, International Monetary Fund, USA, November 5, 1996, *Economic Research Unit, Calcutta.*
62. Purakayastha, S., I.I.T., Bombay, December 9-27, 1996, *Stat-Math Unit, Calcutta.*
63. Rajeev, Meeenakshi, Centre for Studies in Social Sciences, Calcutta, July, 1996, *Economic Analysis Unit, Bangalore.*
64. Rajput, B.S., University of Tennessee, USA, August 6, 1996, *Stat-Math Unit, Bangalore.*
65. Ramakrishnan S., University of Miami, Florida, USA, August 2, 1996, *Stat-Math Unit, Calcutta.*
66. Ramakrishnan, S., University of Miami, USA, August 12, 1996, *Stat-Math Unit, Bangalore.*
67. Ramamoorthi, R.V., Michigan State University, USA, June 18, 1996, *Stat-Math Unit, Calcutta.*
68. Ramaswamy, M., TIFR, Bangalore, March 20, 1997, *Stat-Math Unit, Bangalore.*
69. Rao, Murali K., University of Florida, USA, January 29-30 and February 5, 1997, *Stat-Math Unit, Bangalore.*
70. Rodenacker, K., GSF, Germany, October 20, 1996 - November 2, 1996, *Computer Vision and Pattern Recognition Unit, Calcutta.*
71. Rogaly, Ben, School of Development Studies, UEA, U.K., November 21 - December 11, 1996, *Agricultural Sciences Unit, Calcutta.*
72. Roy, Bimal, December 1996 - March 1997, *Electronics and Communication Sciences Unit, Calcutta.*
73. Roy Chaudhuri, Somak, Inter University Centre for Astronomy and Astrophysics, Pune, April 10, 1996, *Computer Vision and Pattern Recognition Unit, Calcutta.*
74. Sarkar, J., Indiana University - Purdue University, Indianaapolis, USA, June 25, 1996, *Stat-Math Unit, Calcutta.*
75. Sarkar, S., Oklahoma State University, USA, June 26, 1996, *Stat-Math Unit, Calcutta.*
76. Sarkar, S.K., National Physical Laboratory, New Delhi, April 1996, *Electronics and Communication Sciences Unit, Calcutta.*
77. Sarma, S.K., Director, EKO-Imaging Institute, August 1996, *Electronics and Communication Sciences Unit, Calcutta.*
78. Schelesinger, Lee I., Fulbright Lecturer, USA, July 9-10, 1996, *Sociological Research Unit, Calcutta.*
79. Seddon, David, School of Development Studies, UEA, March 24 -25, 1997, *Agricultural Sciences Unit, Calcutta.*
80. Sen, A., Central University, Hyderabad, December 3, 1996 - January 3, 1997, *Stat-Math Unit, Calcutta.*
81. Sen, Anindya, Indira Gandhi Institute of Development Research, Mumbai, July 1996, *Economic Analysis Unit, Bangalore.*

82. Shieh, G.S., Institute of Statistical Science, Academia Sinica, Taiwan, November 17, 1996 - December 15, 1996, *Stat-Math Unit, Calcutta*.
83. Shukla, R.P., Shillong, January 24, 1997, *Stat-Math Unit, Bangalore*.
84. Sinha, S.K., University of Manitoba, Canada, January - April, 1997, *Applied Statistics Unit, Calcutta*.
85. Sivakumar, S., University of Madras, Chennai, August 1996, *Economic Analysis Unit, Bangalore*.
86. Sivakumar, Chitra S., University of Madras, Chennai, August 1996, *Economic Analysis Unit, Bangalore*.
87. Sunder, V.S., Institute of Mathematical Sciences, Madras, October 8-10, 1996, *Stat-Math Unit, Bangalore*.
88. Sur-Kolay, Susmita, Jadavpur University, April 1, 1996 - February 17, 1997, *Electronics Unit, Calcutta*.
89. Sur-Kolay, Susmita, Reader, Jadavpur University, February 24, 1997 - March 31, 1997, *Electronics Unit, Calcutta*.
90. Swartz, C., New Mexico State University, USA, January 3, 1997, *Stat-Math Unit, Bangalore*.
91. Tewari, U.B., I.I.T., Kanpur, December 5-14, 1996, *Stat-Math Unit, Calcutta*.
92. Verma, D.N., TIFR, Bombay, May 21, 1996, *Stat-Math Unit, Calcutta*.
93. Verma, M.K., Indian Institute of Technology, Kharagpur, December 13, 1996, *Physics and Applied Mathematics Unit, Calcutta*.
94. Vijayaditya, Deputy Director General, NIC, June 7, 1996, *Computer Vision and Pattern Recognition Unit, Calcutta*.
95. Viswanath, K., University of Hyderabad, May 2 - June 2, 1996, *Stat-Math Unit, Calcutta*.
96. Volculescu, D., University California, Berkeley, USA, January 13, 1997, *Stat-Math Unit, Bangalore*.
97. Wilson, Jeffrey, A., Research Fellow of the University of Chicago, U.S.A., September 28 - October 24, 1996, *Geological Studies Unit, Calcutta*.
98. William, Q. Meeker, Department of Statistics, IOWA, State University, USA, January 1-5, 1997, *Statistical Quality Control and Operations Research Unit, Bangalore*.

9. HONOURS, AWARDS AND SPECIAL ASSIGNMENTS

Rao, T.J (Stat-Math Unit, Calcutta) was nominated as (i) Co-editor, Sankhya Ser. B, (ii) Member, Editorial Board, Cal. Stat. Assoc. Bull., (iii) Member, Governing Council, N.S.S.O.

Sinha, B.K. (Stat-Math Unit, Calcutta) was appointed as a Member of (i) Editorial Board of the Journal of Indian Society of Agricultural Statistics (JISAS), (ii) Editorial Board of Pakistan Journal of Statistics. He was also invited to conduct a Workshop on Regression Diagnostics for the Statisticians working at United States Environment Protection Agency (USEPA).

Srivastava, S.M. (Stat-Math Unit, Calcutta) was selected as a member, Advisory Committee of the Journal of Indian Academy of Mathematics, Indore and Regional Coordinator for West Bengal of RMO-INMO.

Bhaia, Rajendra (Stat-Math Unit, Delhi) was elected as a Member of National Board for Higher Mathematics and Board of Directors, International Linear Algebra Society.

Bhatt, Abhay G. (Stat-Math Unit, Delhi) was selected as an Associate of the Indian Academy of Sciences

Rao, B.L.S. Prakasa (Stat-Math Unit, Delhi) was appointed as a member of Emeritus Scientists and One-time Research Grant Committee of CSIR for the period 1996-99. He was also appointed as the Chairman, Programme Advisory Committee on Scientometrics, DST, Govt. of India.

Bhat., Rajarama B.V. (Stat-Math Unit, Bangalore) has been awarded the INSA young scientist award.

Thangavelu, S. (Stat-Math Unit, Bangalore) was elected as a Fellow of the Indian Academy of Sciences, January, 1997.

Sen Gupta, Ashis (Applied Statistics Unit) has been relected as a Member of the Executive Council of the Indian Society for Probability and Statistics, 1996-98.

Vijayan, K.S. (Applied Statistics Unit) has been elected as a member of the Advisory Board of the Consortium on Information and Communication Technology that is promoting communication technologies in education.

Chaudhuri, B.B. (Computer Vision and Pattern Recognition Unit) has been elected as a Fellow of (i) the Indian National Academy of Engineering, 1996. (ii) the Institute of Electronics and Telecommunication Engineers, 1997.

Chaudhuri, B.B. and Sengupta, P. (Computer Vision and Pattern Recognition Unit) have jointly been awarded the Achuta Mennon Award for the best paper on natural language Processing in 1996.

Pal, U. (Computer Vision and Pattern Recognition Unit) has been awarded a merit certificate from the Indian Science Congress Association in 1997.

Bhattacharya, Bhargab B. (Electronics Unit) has served as the Chairman of the program committee of the Tenth International Conference on VLSI Design 1997 jointly sponsored by IEEE Circuits and Systems Society, IEEE Computer Society, ACM SIGDA and VLSI Society of India. He has also been serving as the member of (i) the program committee of the Fourth International Conference on High Performance Computing (HiPC '97) jointly sponsored by IEEE Computer Society and ACM SIGARCH, (ii) the program committee of the Eleventh International Conference on VLSI Design 1998 jointly sponsored by IEEE Circuits and Systems

Society, IEEE Computer Society, ACM SIGDA and VLSI Society of India, (iii) the program committee of the International Conference on Advanced Computing ADCOMP '97 and (iv) the program committee of the International Conference on Computers and Devices for Communication (CODEC), Calcutta to be held in January 1998.

Sinha, Bhabani P. (Electronics Unit) became a Fellow of the Institution of Electronics and Telecommunication Engineers, India. He has been serving as (i) the Vice Chairman (Asia) of the program committee of the Fourth International Conference on High Performance Computing (HiPC'97) jointly sponsored by IEEE Computer Society and ACM SIGARCH and (ii) the member of the programme committee of the International Conference on Computers and Devices for Communication (CODEC), Calcutta to be held in January 1998. He has served as a member of (i) the program committee of the 3rd International Conference on High Performance Computing (HiPC '96), jointly sponsored by IEEE Computer Society, ACM SIGARCH and CDAC, India, (ii) the program committee of the International Conference on Advanced Computing ADCOMP '96.

Basak, J. (Machine Intelligence Unit) received the INSA Medel for Young Scientists, 1996 in Engineering Sciences.

Mitra, S. (Machine Intelligence Unit) has been granted equipment under the Supra-regional Material and Equipment Programme for Universities in Developing Countries from the Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ) GMBH to conduct a project on Neuro Fuzzy Computing.

Pal, N. R. (Machine Intelligence Unit) has been continuing as an Associate Editor of the Int. J. Approximate Reasoning and IEEE Trans. on Fuzzy Systems and a guest editor of a special issue on soft computing for pattern recognition for the journal Fuzzy Sets and Systems. He has served the program committee of different international conferences.

Pal, S. K. (Machine Intelligence Unit) has been appointed as an Associate Editor of the Int. J. Knowledge Based Intelligent & Engineering Systems, and as a Guest Editor of Fundamenta Informaticae for editing a Special Issue on Soft Computing. He also served as a Guest Editor of the special issue on Neural Networks of the J. of Inst. of Engg. & Telecom. Engrs., vol. 42, no. 4 & 5, 1996. He has also been continuing to serve as an Associate Editor of the journals - IEEE Trans. on Neural Networks, Pattern Recognition Letters, Neurocomputing, Far-East J. of Mathematical Sciences, Information Sciences (Applications), and Applied Intelligence; as an Executive Advisory Editor of IEEE Trans. on Fuzzy Systems and Int. J. of Approximate Reasoning; and a member of the Reviewing Board of Mathematical Reviews (American Mathematical Society) and IEEE Computer. He served as a member of (i) the Planning and Programming Committee of Birla Industrial and Technology Museum (BITM), India; (ii) Engineering Sciences Research Committee of the Council of Scientific & Industrial Research (CSIR); (iii) the Program Committee, 4th Int. Conf. on Soft Computing, IIZUKA'96, Japan.; (iv) Program Committee of the IEEE Int. Conf. on Fuzzy Systems FUZZ-IEEE '97, Barcelona, July 1-5, 1997; (v) Advisory Committee, Conf. on Neural Networks and Fuzzy Systems, Anna University, July 23-25, 1997; (vi) Local Program Committee, Int. Conf. on Computer Vision (ICCV'98), IIT, Bombay, Jan. 3-8, 1998; (vii) Advisory Committee, Int. Conf. on Computer and Devices for Communication (CODEC), Calcutta, Jan. 14-17, 1998; (viii) Int. Program Committee, Computational Engineering in Systems Applications, (CESA'98, IEEE-IMACS Multiconference), April 1-4, 1998, Tunisia; and Program Committee, Int. Symposium on Neural Computing (NC'98), Sept. 23-25, 1998, Vienna. He has been serving as the Int. Liaison Chair of the IEEE Int. Conf. on Neural Networks (ICNN'97), Houston, June 8-12, 1997.

Sarbadhikari, S. N. (Machine Intelligence Unit) has been selected for inclusion in the Marquis Who's Who in the World, 15th edition. He has also been a Co-editor for the JIMA Editorials on Medico-Social Issues (1931-1996), published by the Journal of the Indian Medical Association, 1996.

Bandyopadhyay, Saswati (Geological Studies Unit) has been awarded the official membership of the Dinosaur Society, U.S.A.

Basu, A. (Anthropology and Human Genetics Unit) served as a member of UGC Panel on Anthropology and Screening Committee, AnSI Golden Jubilee Celebration Committee.

Gupta, R. (Anthropology and Human Genetics Unit) was elected as a member, Editorial Advisory Board, Journal of Human Ecology and Editorial Board, Anthropology Section of the Encyclopaedia Asiatica.

Malhotra, K.C. (Anthropology and Human Genetics Unit) was appointed as a member of (i) the School of Human and Environmental Sciences, NERU, Shillong, (ii) the Planning Board of Arunachal University, (iii) the panel AIDs project in West Bengal, (iv) the National network on sickle cell anemia.

Neogi, Chiranjib and Ghosh, Nilabja (Economic Research Unit) were awarded the D.K. Desai award by the Indian Society of Agricultural Economics.

Chaudhry, Amitav (Linguistics Research Unit) was nominated as the Coordinator of the Indian National Chapter of the International Quantitative Linguistic Association, (Trier, Germany).

Dutta, Bhaskar (Planning Unit, Delhi) was elected as a Fellow of the Econometric Society and Committee Member for India and South Asia, Council of Econometric Society.

Bandyopadhyay, Suraj (Sociological Research Unit) has been functioning as a member of (i) Strategic Planning Cell, Department of Health and Family Welfare, Government of West Bengal, (ii) Advisory Committee, Eastern Regional Centre of the Indian Council of Social Science Research (ICSSR), Calcutta, (iii) Advisory Committee, Agro-Economic Research Centre, Visva-Bharati University, Santiniketan, (iv) Ad-hoc Committee for the West Bengal Board of Primary Education, Government of West Bengal, (v) Advisory Committee of NCERT for DPEP, set up by MHRD & DOE, Government of India. He also served as a (i) chairman of the Academic Council, Agro-Economic Research Centre, Visva-Bharati University, Santiniketan and (ii) Social Sciences Area Editor, Everyman's Science, Journal of the Indian Science Congress Association, Calcutta.

Chakrabarti, Prafulla (Sociological Research Unit) has functioned as a Member of the Expert Committee, Encyclopaedia Asiatica, Vol. 1, Land and People.

Dasgupta, Atis (Sociological Research Unit) has been selected as a member of (i) the Advisory Committee of the State Archives of Government of West Bengal, (ii) the Advisory Committee of the State Archaeology, Government of West Bengal, (iii) the Advisory Committee of the District Gazetteers, Government of West Bengal, (iv) the Governing Body of Netaji Institute of Asian Studies, Government of West Bengal, (v) the Governing Body of the Calcutta Museum, (vi) the State-level Committee of the 'Birth Centenary of Netaji Subhas Chandra Bose', (the Governor has also selected Dr. Dasgupta to be a member of the Working Committee constituted by the above State-level Committee), (vii) the Steering Committee for Netaji Subhas Chandra Bose Open University, (viii) the State-level Committee for publication on the occasion of 50 years of Independence.

Maiti, Asok K. (Sociological Research Unit) has been selected as the Member-Secretary of Indian Academy of Social Sciences (IASS).

10. SCIENTIFIC TOURS AND ASSIGNMENTS ABROAD

- Chaudhuri, P. (Stat-Math Unit, Calcutta) visited Department of Statistics, University of North Carolina, Chapel Hill, USA during January, 1997 - May, 1997 as a visiting associate Professor.
- Das, A. (Stat-Math Unit, Calcutta) visited Ohio State University, USA during October, 94 - September, 96 as a visiting assistant Professor in the Department of Statistics. He carried out research, jointly with Prof. Angela Dean and Prof. W. Notz, on Diallel Cross Designs and optimal minimally connected designs.
- Rajeev, B. (Stat-Math Unit, Calcutta) visited University of Paris VI, Laboratoire de Probabilités, during February 15, 1997 - May 9, 1997 and delivered three lectures.
- Rao, S.B. (Stat-Math Unit, Calcutta) visited JÁNOS BOLYAI, Mathematical Society, Budapest, Hungary and participated in the conference on (i) International Colloquium on Combinatorics and Graph Theory, Balatonlelle, Hungary during July 15-20, 1996; (ii) 2nd European Congress of Mathematics, Budapest, Hungary during July 21-27, 1996.
- Sinha, B.K. (Stat-Math Unit, Calcutta) visited (i) Statistical Centre of Iran during June, 1996 and attended International Conference as an Invited Speaker and organized a Workshop on Regression Diagnostics; (ii) Mathematical Sciences Unit - Hungarian Academy of Sciences during August 1996 and jointly researched with Prof. R. Zielinski and attended International Conference as an Invited Speaker; (iii) Brawjaya University (Malang), Indonesia during September 1996 and attended International Conference as an Invited Speaker; (iv) University of Oulu, Finland during November 1-15, 1996 and delivered a series of lectures on "Topics of Current Research in Statistical Inference" and interacted with Prof. Hannu Oja.
- Bapat R.B. (Stat-Math Unit, Delhi) visited (i) INRIA, Paris during June, 10-29, 1996 and July 5 - August 12, 1996 and worked jointly with Professor Stephan Gaubert and M. Akian on some problems in max algebra; (ii) University of Amsterdam during June 30 - July 4, 1996. (iii) Prof. H. Yanai at National Centre for University Entrance Examination, Tokyo, Japan during November, 11-16, 1996 and gave an invited talk at Conference on Multivariate Analysis, Tokyo Institute of Technology. He also gave an invited talk at the Sixth Conference of the International Linear Algebra Society during August 13-16, 1996.
- Bhatia, Rajendra (Stat-Math Unit, Delhi) visited the Universities of Ljubljana and Maribor in Slovenia during May-June, 1996 to attend a Linear Algebra Workshop and collaborative research work with Professor P. Šemrl. He also attended the International Linear Algebra Society Conference in August 1996 held at Chemnitz, Germany and gave an invited talk on Perturbation Theory.
- Kocher, S.C. (Stat-Math Unit, Delhi) visited (i) the Biostat Lab, University of Texas, El Paso, USA during May 1, - June 30, 1996, collaborated in research with Professor Javier Rojo and gave a series of seminars in the Lab.; (ii) the Manitoba Centre for Health Planning, University of Manitoba, Winnipeg, Canada during July 1-28, 1996 and collaborated in research with Dr. K.C. Carriere. He also gave a seminar in the Dept. of Statistics, University of Manitoba, during July, 1996 and at Southern Methodist University, Dallas and University of Texas, Arlington during June, 1996.
- Panhasarathy, T. (Stat-Math Unit, Delhi) visited Tokyo Institute of Technology Japan, during December 1-19, 1996 under the bilateral exchange programme of INSA and Japan Society for Promotional Sciences. He collaborated with Professor M. Kojima on problems relating to Semidefinite programming and stochastic game theory. During the visit he has given talks on (i) Stability and Largeness of the Core in symmetric games, December 5, 1996 at Tokyo Metropolitan University, Tokyo; (ii) Univalence of

mappings, December 12, 1996 at the Institute of Statistical Mathematics, Tokyo; (iii) Characterization of Lipschitzian Q_2 -matrices, December 13, 1996 at Tokyo Institute of Technology; (iv) Linear Complementarity problems in static and dynamic games, December 18, 1996 at the Symposium on Dynamic games held at the Shonan Village center, Kanagawa, Japan.

- Prakas Rao, B.L.S. (Stat-Math Unit, Delhi) visited (i) U.S.A. during April 2-21, 1996 to receive the outstanding Alumni award from the College of Natural Sciences, Michigan State University on April 15, 1996; (ii) Hongkong University of Science and Technology during 6December 2-4, 1996 (iii) Japan during November 17, - December 1, 1996 under the INSA-JAPAN Scientific and Cultural Exchange Programme. He also delivered lectures on (i) Distributions with periodic failure rate and related inference problems, University of Pittsburgh, April 4, 1996; (ii) Nonparametric functional estimation : an overview, Pennsylvania State University, April 5, 1996; (iii) Spatial data analysis, American Statistical Association, Milwaukee Chapter, April 9, 1996; (iv) Spatial data analysis, Purdue University (K.C.S. Pillai Memorial Lecture), April 12, 1996; (v) Spatial data analysis, Michigan State University, April 16, 1996; (vi) Cramer-Rao type integral inequalities, Keo University, November 18, 1996; (vii) Cramer-Rao type integral inequalities, University of Tsukuba, November 19, 1996; (viii) Spatial data analysis, Institute of statistical mathematics, Tokyo, November 20, 1996; (ix) Spatial data analysis, Osaka University, November 25, 1996. (x) Cramer-Rao type integral inequalities, Osaka city University, November 25, 1996, (xi) Identifiability in stochastic models, Kagashima University, November 28, 1996. (xii) Spatial Data Analysis on December 2, 1996.
- Rao, K.P.S.B. (Stat-Math Unit, Bangalore) visited Wesleyan University, Middletown, Connecticut, USA as John Hasbrook Van Vleck Visiting Professor of Mathematics during September - December, 1996 and gave a talk on "On Kelly's Theorem" at the sixth international meeting on Real analysis and measure theory, Ischia, Italy during July 12-21, 1996.
- Thangavelu, S. (Stat-Math Unit, Bangalore) visited the University of New Mexico for the academic year 1996-1997.
- SenGupta, Ashis (Applied Statistica Unit) visited University of California, Santa Barbara, USA during January - June, 1997 as a Visiting Professor.
- SenGupta, Debasis (Applied Statistica Unit) visited the Department of Statistics and Applied Probability, University of California, Santa Barbara, USA during September 1995 - February 1997.
- Chaudhuri, B.B. (Computer Vision and Pattern Recognition Unit) visited (i) Vienna, Austria to present five papers in the 13th International Conference on Pattern Recognition during August 25-31, 1996; (ii) GSF - Gesellschaft für Strahlen- und Umweltforschung, Munich, Germany during August 13 - September 29, 1996 to supervise the work of Indo-German collaboration; (iii) University of Leeds during September 23-29, 1996 and delivered an invited lecture.
- Umesh Adiga, P.S. (Computer Vision and Pattern Recognition Unit) visited GSF - Gesellschaft für Strahlen- und Umweltforschung, Munich, Germany during July, 1996 - February 1997 to work on confocal microscopic images.
- Sur-Kolay, Susmita (Electronics Unit) visited USA during March - April, 1997 to present a paper in the 1997 International Symposium on Physical Design ISPD - 97, Napa Valley, California, USA.
- Banerjee, Sreeparna (Electronics and Communication Sciences Unit) visited International Center of Theoretical Physics, Trieste, Italy during September 9-27, 1996 to provide participants with overview of latest trends in parallel processing research and diverse applications of parallel processing in physics, chemistry and materials science, including some hands on experience.
- Deb, N.C. (Electronics and Communication Sciences Unit) participated in XV Antartica expedition as a scientific team member in Indian group during November 1995 - April 1997 at Antartica and he conducted several investigations of atmospheric science with other team members of the group at Antartica.

- Bandyopadhyay, S. (Machine Intelligence Unit) attended the CIMPA-INRIA-UNESCO Summer School on Object-based languages and models held at the International Centre for Pure and Applied Mathematics, Nice, France during July 1 - 12, 1996.
- Bancjeo, M. (Machine Intelligence Unit) visited the Institute of Mathematics, University of Warsaw, Poland during November 27 - December 31, 1996. She also delivered an invited talk at the Workshop "Logic, Algebra and Computer Science - Helena Rasiowa in Memoriam", Warsaw, Poland during December 2 - 22, 1996.
- Basak, J. (Machine Intelligence Unit) visited the Brain Information Processing Research Group, Institute of Physical and Chemical Research (RIKEN), Saitama, Japan to give talks and had discussions for collaborative research works during July 7 - 13, 1996. He is currently visiting the same Institute since February, 1997.
- De, R. K. (Machine Intelligence Unit) attended the CIMPA-INRIA-UNESCO Summer School on Object-based languages and models held at the International Centre for Pure and Applied Mathematics, Nice, France during July 1 - 12, 1996.
- Ghosh, A. (Machine Intelligence Unit) visited Osaka Prefecture University, Osaka, Japan with a Japanese Govt. Postdoctorate Fellowship during October 1995 - March 1997. He also visited (i) Hannan Univ., Osaka, Japan, (ii) Ryukoku Univ., Kyoto, Japan, (iii) Korea Advance Institute of Science and Technology (KAIST), Taejon, Korea, (iv) Kyung Nam Univ., Masan, Korea, (v) Hitachi Central Research Laboratory, Tokyo, Japan, (vi) Tokyo Institute of Technology, Tokyo, Japan, (vii) Systems Development Lab., Hitachi, Tokyo, Japan, (viii) Kyushu Institute of Design, Kyushu, Japan, (ix) Kyushu Institute of Technology, Iizuka, Japan.
- Mitra, S. (Machine Intelligence Unit) attended the CIMPA-INRIA-UNESCO Summer School on Object-based languages and models, International Centre for Pure and Applied Mathematics, Nice, France during July 1 - 12, 1996. She presented a paper at the 4th International Conference on Soft Computing, Kyushu Institute of Technology, Iizuka, Japan during September 30 - October 5, 1996 and visited the Osaka Prefecture Univ., Japan in Oct., 1996. She also delivered a talk at Kyushu Institute of Technology, Japan during October, 1996.
- Murthy, C. A. (Machine Intelligence Unit) visited Dept. of Statistics, Pennsylvania State University, University Park, USA since July, 1996.
- Pal, K. (Machine Intelligence Unit) visited the University of West Florida, Pensacola, USA for three months since October, 1996 to work on rule extraction from numerical data and presented a paper at the 4th International Conference on Soft Computing, Iizuka, Japan, 1996.
- Pal, N.R. (Machine Intelligence Unit) visited Japan in September, 1996. He also visited Taiwan in December, 1996 to give a plenary talk on different facets of uncertainty at the Asian Fuzzy Systems Symposium, 1996. He presented two papers, gave a tutorial lecture on neuro-fuzzy system for pattern recognition and chaired a session at the 4th International Conference on Soft Computing, Iizuka, Japan, 1996. He was with the University of West Florida, Pensacola, USA for three months since October, 1996.
- Pal, S.K. (Machine Intelligence Unit) visited Japan during September 14 - October 10, 1996, under the INSA-JSPS Scientific Exchange Program. He delivered invited talks in the areas of neuro-fuzzy computing, machine intelligence, soft computing and uncertainty handling in pattern recognition problems at (i) Electro-communication University, Tokyo, on September 17, 1996; (ii) Tokyo Metropolitan Institute, Tokyo, on September 19, 1996; (iii) Univ. of Aizu, Fukushima, on September 24, 1996; and (iv) Osaka Prefecture University, Osaka, on October 8, 1996. He also visited (i) Graduate School of Information Systems, Cho-fu, Tokyo; (ii) Real World Computing Partnership (R/WCP), Theory and Novel Functions Dept., Tsukuba; (iii) Electro-Technical Laboratory, Machine Understanding Division, Tsukuba; (iv) Fuzzy Logic System Institute (FLSI), Iizuka, and discussed with the scientists on various problems related to fuzzy logic and artificial neural networks applications. He has participated at the 4th International Conference on Soft Computing, IIZUKA'96.

- where he chaired a session and gave an invited talk. As a co-investigator of an INDO-POLISH collaborative project titled "Reasoning under uncertainty about complex objects/rough set theory and fuzzy set theory", he also visited (i) Poland during February 18 - March 5, 1997 to work at the Institute of Mathematics, Univ. of Warsaw, Warsaw. (This was arranged by the Dept. of Science & Technology (DST), India and the Polish State Committee for Scientific Research (KBN), Poland). (ii) Systems Research Institute, Polish Academy of Sciences, Warsaw. (iii) Warsaw Institute of Technology, Warsaw. and (iv) Institute of Telecommunications, Warsaw. He delivered invited talks at the (i) Institute of Mathematics, Univ. of Warsaw, Warsaw, on February 21, 1997, (ii) Institute of Computer Science, Polish Academy of Sciences, Warsaw, on February 25, 1997, and (iii) Institute of Computer Science, Poznan Univ. of Technology, Poznan, on February 27, 1996.
- Sarbadhikari, S. N. (Machine Intelligence Unit) visited the Computer Science Division of St. George's Hospital Medical School, London, for discussion on Medical Image Database Retrieval during September 2 - 5, 1996 and to the Tropical Medicine Resource unit, Wellcome Centre for Medical Science, London, for discussion on tropical diseases' image recognition on September 11, 1996. He presented a paper at the 2nd International Conference on Neural Networks and Expert Systems in Medicine and Healthcare (NNESMED '96), University of Plymouth, UK during August 28 - 30, 1996. He also delivered an invited talk on Medical Informatics at the Belmont Postgraduate Psychiatric Research Centre, Sutton Hospital, Surrey, UK on September 9, 1996.
- Bandyopadhyay, Saswati (Geological Studies Unit) visited (i) the Oxford University Museum, University of Oxford, U.K. during October 3-7, 1996 - October 14-16, 1996 to study the Jurassic crocodile collection and to consult the latest scientific journals and books at the Bodleian Library, (ii) the National History Museum (BMNH), U.K. during October 8-10, 1996 to study the Cretaceous dinosaur collection, (iii) the Sedgwick Museum and the Department of Zoology, Cambridge University, UK during October 11-13, 1996 to study the Permian and Triassic collection, (iv) the Museum of Northern Arizona, Flagstaff, Arizona, U.S.A. during October 20-31, 1996 to attend the Continental Jurassic Symposium, to participate in a short field trip in the Jurassic localities of Arizona arranged by the Symposium organisers and to study the vertebrate fossil collection in the Museum of Northern Arizona, Flagstaff, (v) the Department of Organismal Biology, University of Chicago and the Field Museum in Chicago, U.S.A. during November 1-7, 1996 to study the collection of Cretaceous dinosaurs of Morocco and Argentina; (vi) the Department of Paleontology, Carnegie Museum of Natural History, Pittsburgh, U.S.A. during November 8-15, 1996 to study the sauropod collection.
- Roy, Barnana (Physics and Applied Mathematics Unit) visited International Centre for Theoretical Physics, Trieste, Italy, during October, 1996.
- Roy, Pinaki (Physics and Applied Mathematics Unit) visited Erlangen - Nürnberg, Germany on Cultural Exchange Programme during August - October, 1996.
- Roychoudhury, R. (Physics and Applied Mathematics Unit) visited Institute of Nuclear Physics, Prague, Czech Republic on Cultural Exchange Programme. He also gave invited talks in the Institute of Nuclear Physics and Institute of Physics and Mathematics, Prague during October 1996.
- Roy, S. (Physics and Applied Mathematics Unit) visited (i) Department of Theoretical Physics, Royal Institute of Technology, Stockholm during April 9 - 16, 1996 and attended Cultural Exchange Programme; (ii) Department of Electrical Engineering, University of Linköping, Linköping, Sweden during April 17 - June 30, 1996. He delivered a Lecture on Joint time-frequency distribution and Unsharp Observables.
- Mukherjee, Soma (Physics and Applied Mathematics Unit) visited the Pennsylvania State University, USA during April - July, 1996 and the Max - Planck Institut für Gravitations Physik, Germany during September - December, 1996 for her collaborative research work. She participated in Gravitational Wave Data Analysis Work Shop at M.I.T., Cambridge, USA during December 6 - 10, 1996, and visited NASA Ames Centre, USA during June 24 - 27, 1996 to participate in the Conference 'Stardust to Planetsimals'. She gave an invited talk at Department of Astronomy, University of Wisconsin, Madison, USA in June 16, 1996 entitled 'On magnetic fields in Radio Pulsars'. She also gave a talk at

Max - Planck - Institute, entitled 'On non-gaussianity of the Glasgow Laser Interferometric Detector Noise' on November 27, 1996.

- Banik, P. (Agricultural Sciences Unit) visited GIS/IP Laboratory, Social Science Division, International Rice Research Institute, Los Banos, Philippines during November 1-30, 1996 for training work.
- Dasgupta, P. (Anthropology and Human Genetics Unit) visited National Institute of Nutrition, Rome, Italy.
- Majumder, P.P. (Anthropology and Human Genetics Unit) visited Rio de Janeiro, Brazil & Bethesda, USA during August 15-27, 1996. He participated in (i) the Conference of the International Genetic Epidemiology Society during August 17-18, 1996 and delivered a talk on "Familial and Non-Familial Factors in the Predisposition to Disruptive Behaviours in Boys at Risk for Substance Abuse"; (ii) the IX International Congress of Human Genetics during August 19-23, 1996. He organized an invited State-of-the-Art Session on "Polymorphisms and their Maintenance at Different Levels" and delivered a talk in the session on August 22, 1996. He also delivered an invited talk on "Statistical Methods for Analysis of Family Data on Complex Human Disorders" at the National Center for Human Genome Research, National Institutes of Health, Bethesda, U.S.A.
- Malhotra, K.C. (Anthropology and Human Genetics Unit) participated in IUCN's World Conservation Congress, Montreal during October 16-22, 1996. He presented two invited papers in sessions Water and Population Dynamics and Collaborative Management.
- Datta Gupta, C. (Biochemistry Unit) visited Department of Obstetrics and Gynecology, Albert Einstein College of Medicine and Montefiore Medical Center, Bronx, New-York and New-York Blood Center as a visiting Assistant Professor during December, 1995 - August, 1996 for Collaborative Research.
- Chakravarty, S.R. (Economic Research Unit) visited the Kagawa University, Japan during December 16, 1996 - January 14, 1997 and delivered some lectures.
- Majū, Pulakesh (Economic Research Unit) visited the Centre for Statistics of the Human Sciences Research Council (HSRC), South Africa, as a specialist consultant in Survey methodology during January, 1995 - December, 1996. He also visited and delivered lectures/seminars in the University of South Africa, University of Transkei, South Africa, the University of Pretoria.
- Rao, K. Surekha (Economic Analysis Unit) visited Department of Mathematics, Wesleyan University, Middletown, CT, USA during September - October, 1996 and Department of Economics, Barney School of Business, University of Hartford, West Hartford, CT, USA during September - December, 1996.
- Das, Satya P. (Planning Unit, Delhi) visited University of Wisconsin, Milwaukee during March - May, 1997 for teaching and research.
- Ramaswamy, Bharat (Planning Unit, Delhi) visited University of British Columbia during January - June, 1996 for teaching and research.
- Sarma, Atul (Planning Unit, Delhi) visited F.A.O. of United Nations, Regional Office for Asia and the Pacific, Bangkok during November 20-30, 1996 and participated in discussion and consultation with respect to Experience of China and Asian countries on Reform Process. He also visited Economisch Institute, University of Utrecht during April 8-21, 1997 to prepare the final manuscript of the book: MEETING THE CHALLENGES OF THE EUROPEAN UNION : PROSPECTS OF INDIAN EXPORTS.
- Ebosh, Anjali (Psychology Research Unit) visited the Department of Psychology, Rajshahi University, Bangladesh during October 14-17, 1996 and held academic discussions with the faculty members of the Department and gave a seminar on "Role of Psychometrics in Psychological Research". She also participated in the 9th Biennial Conference of Bangladesh Psychological Association held at the Department of Psychology, Dhaka University, Bangladesh during October 10-12, 1996 and presented a paper entitled "Entrepreneurship ability and its predictor variables : An Indian example".

- Chaudhuri, A.K. (Statistical Quality Control and Operations Research Division) gave a workshop at ABB Sweden during June 24-25, 1996.
- Das, Prasun (Statistical Quality Control and Operations Research Division) attended Sydney International Statistical-96, Sydney, Australia and gave invited talk entitled "Statistical Modules in road traffic noise data analysis - A case study in Calcutta Metropolitan, India".
- Majumder, S. (Statistical Quality Control and Operations Research Division) visited International Conference on Quality held at Yokohama, Japan during October 15-18, 1996. He presented a paper titled Quality Information System. He was also the Chairman of a session on new Product Development in the same conference.
- Rao, N.T.V. Ranga (Statistical Quality Control and Operations Research Division) attended 3 weeks top Management seminar on leadership for quality at Sweden during June 3-29, 1996.
- Ray, S. (Statistical Quality Control and Operations Research Division) attended joint Research Conference on Statistics in Quality, Industry and Technology in Gaithersbing, USA during May 29-31, 1996.
- Seti, Arvind (Statistical Quality Control and Operations Research Division) attended the 3rd Iranian Statistical Conference held in Tehran during July 1-3, 1996. He presented a paper titled "consecutive-k-out-of-n : F system and component Importance".

11. SCIENTIFIC ASSIGNMENTS IN INDIA

- Chaudhuri, P. (Stat-Math Unit, Calcutta) delivered invited lecture at the workshop on *Advanced Econometric Methods* organised by Reserve Bank of India, Bombay in December, 1996.
- Das, A. (Stat-Math Unit, Calcutta) visited Sambalpur University, Jyoti Vihar, Sambalpur, as a resource person, in the workshop on *Optimal Experimental Designs with Applications* held during December 19-28, 1996 and gave a series of lectures on optimality criterion and Diallel cross experiments.
- Mukherjee, G. (Stat-Math Unit, Calcutta) attended a workshop on *Homotopy and Geometry* held at IISc., Bangalore during December 1996.
- Rajeev, B. (Stat-Math Unit, Calcutta) visited the Indian Institute of Science, Bangalore, Department of Computer Science and Automation for one week during May-June 1996 and gave three talks.
- Rao, T.J. (Stat-Math Unit, Calcutta) delivered two lectures at Bangalore University, December 1996 and delivered four lectures at Andhra University, Waltair, May 1996, UGC Refresher course at Dept. of Statistics.
- Roy, A.K. (Stat-Math Unit, Calcutta) acted as the Chief Guest at the annual meeting (1996) of the Mathematical Association of Gauhati and as an invited speaker at the annual meeting (February 1997) of the Orissa Mathematical Society held at Bhanga College, Bhanjanagar (Orissa).
- Saha, G.M. (Stat-Math Unit, Calcutta) delivered two talks on *Repeated Measurement designs* at the workshop on *Optimal Experimental Designs with Applications* organised by ISI jointly with Dept. of Statistics, Sambalpur University during 19-28 December 1997.
- SahaRaj, R. (Stat-Math Unit, Calcutta) was an invited speaker in the workshop on *Optimal Experimental Designs with applications* held in Sambalpur University, Orissa during December 19-28, 1996.
- Srivastava, S.M. (Stat-Math Unit, Calcutta) was a guest speaker at the *International Mathematical Olympiad Training Camp*, May 1997 (2 weeks), Homi Bhabha Centre for Science Education, Mumbai.
- Bapat, R.B. (Stat-Math Unit, Delhi) visited Homi Bhabha Centre for Science Education, Bombay and gave lectures in the *Training Camp for Math Olympiad students*, April 22-26, 1996.
- Prnkasa Rao, B.L.S. (Stat-Math Unit, Delhi) visited national Remote Sensing Agency at Hyderabad and delivered two lectures in the *Workshop on Spatial Data Analysis* sponsored by NRSA and ISI on March 1, 1996.
- Bagchi, B. (Stat-Math Unit, Bangalore) gave two talks on *Some recent optimality results of Chunag and Bailey* at the workshop on *Optimal experimental designs with applications* organised by ISI and Sambalpur University, 19-28 December, Sambalpur University.
- Bagchi, S. (Stat-Math Unit, Bangalore) gave two talks on "On the comparison of non-isomorphic row column designs with the same marginals" and "Two infinite series of nested row column designs" at the *Workshop on Optimal experimental designs with applications* organised by ISI and Sambalpur University, 19-28 December, Sambalpur University.
- Delampady, M. (Stat-Math Unit, Bangalore) gave a talk on "Some recent developments in statistical computing" at the UGC sponsored workshop on *Statistical modelling and applications*, Feb 10-12, 1997, Mysore University.

Natarajan, S. (Stat-Math Unit, Bangalore) gave an invited talk on "The chaos game at the Second Frontier Meeting in Physics on Chaos, Complexity and Information" organised by Kumari L.A. Meera Memorial Trust, February 1 - 7, 1997, Mysore.

Pati, V. (Stat-Math Unit, Bangalore) gave a series of four lectures on Seiberg Witten Invariants at the Conference on Geometry and Topology, December, 1996, IISc, Bangalore. He was also a member of the organising committee of "Conference on Geometry and Topology".

Padmarav, V.R. (Stat-Math Unit, Bangalore) gave lectures at the workshop on research methodology and techniques, Kerala Institute for Local Administration, Trichur, conducted by Kerala Research programme on Local Level Development, Centre for Development Studies, Trivandrum, December 3-6, 1996.

Bhat, B.V. Rajarama (Stat-Math Unit, Bangalore) gave talks on "E_{*}-semigroups and continuous analogues of Fock space" at the Institute of Math. Sciences, October 25, 1996, Chennai, "A generalized intertwining lifting theorem" at the conference on Analysis and Probability in honour of Prof K.R. Parthasarathy, January 2-4, 1997, ISI, New Delhi and "A generalized intertwining lifting theorem", International conference on Operator Algebras at the Institute of Math. Sciences, January 6-11, 1997, Chennai.

Ramasubramanian, S. (Stat-Math Unit, Bangalore) gave an invited talk on "Asymptotics of reflecting diffusions in an orthonant" at an International Conference on Stochastic Processes held in December 1996 at Cochin University of Science and Technology and gave another invited talk on "Reflecting diffusions in a nonsmooth domain" at a conference on Probability and analysis held in January 1997 at the Indian Statistical Institute, Delhi. He gave a series of six lectures on "Skorohod problem" at the UGC sponsored refresher course for University/College teachers, March 1997, Cochin University of Science and Technology.

Sastry, N.S.N. (Stat-Math Unit, Bangalore) has been appointed as a member of the "School Board of Physical Sciences", NE Hill University.

Sitaram, A. (Stat-Math Unit, Bangalore) (i) gave an invited talk on "Analogues of the theorems of Hardy and Wiener for semi-simple Lie groups" at the conference on Analysis and Probability, January 2-4, 1997, ISI, Delhi; (ii) gave an invited inaugural lecture on "some historical remarks on groups representations and harmonic analysis" at the Fifth Ramanujan Symposium on Harmonic Analysis, March 13-15, 1997, Ramanujan Institute for Advanced Study in Mathematics, University of Madras; (iii) gave an invited lecture on "The continuous wavelet transform and a theorem of Schwartz" at the Fifth Ramanujan Symposium on Harmonic Analysis, March 13-15, 1997, Ramanujan Institute for Advanced Study in Mathematics, University of Madras; (iv) gave a series of lectures on "From Fourier series to wavelets" at the University of Hyderabad, January-February, 1997 under the UGC Special Assistance Programme, (v) gave a lecture on "Some application of a theorem of Schwartz" on March 1997, IIT, Kanpur, (vi) was appointed as one of the Associate Editors for "Resonance - journal of science education" published by the Indian Academy of Science for the period January 1997 - December 1998, (vii) appointed as a member of the editorial board of PRAVESHUKA, a series of lecture notes to be published by the National Board for Higher Mathematics; (viii) was co-opted as a member of the Nurture Programme Committee, a Sub-Committee of NBHM; (ix) conducted the NBHM Nurture Programme for the 1994 batch of INMO awardees during June 1996 along with G. Misra, V. Pati, S. Thangavelu, S. Ramasubramanian and V. Borkar.

Pal Chaudhury, P. (Applied Statistics Division) (i) visited University of Berhampur, Orissa for Examinership, August 1996, (ii) visited Sambalpur University, Orissa for a week for deliver lectures in the UGC Refresher Course, September 1996; (iii) visited University of Hyderabad, A.P. for two days to deliver lectures on Cellular Automata, January 1997.

Mukhopadhyay, P. (Applied Statistics Unit) visited Dr. B. Ambedkar University, Marathwade, April 1-2, 1996 for oral examination of a thesis.

- Chaudhuri, B.B. (Computer Vision and Pattern Recognition Unit) (i) visited International School of Dravidian Linguistics, Trivandrum to deliver an invited lecture and to act as a project consultant during April, 18-21, 1996; (ii) visited Department of Electronics during July 16-17, 1996 to attend a meeting on Technology Development on Indian language; (iii) visited Advanced Data Processing Research Institute, Hyderabad to act as an expert in DPC meeting during November 27-28, 1996; (iv) visited the National Center for Software Technology (NCST), Bombay during December 16-18, 1996 and chaired a session in Int. Conf. on Knowledge Based Computer Systems organized by NCST; (v) visited Department of Science and Technology for presentation of a project during January 30-31, 1997 and also the Department of Electronics, Jawaharlal Nehru University and ICMR; (vi) visited University of Hyderabad during March 21-26, 1997 and chaired a session at Indo-French Symposium on Natural Language processing.
- Pal, U. (Computer Vision and Pattern Recognition Unit) (i) visited Rourkela Engineering College to deliver an invited lecture on OCR Development on Printed Bangla Script in a workshop organized by Computer Society of India, August 20-21, 1996; (ii) participated in the 84th Indian Science Congress Association, held at the University of Delhi during January 3-8, 1997.
- Bhattacharya, U. (Computer Vision and Pattern Recognition Unit) visited Inter University Centre for Astronomy and Astrophysics, March 27 - May 2, 1996.
- Sinha, Bhabani P. (Electronics Unit) (i) went to Computer Centre, Banaras Hindu University for delivering a series of lectures on Parallel Architectures and Algorithms, August 26-28, 1996; (ii) went to Indian Institute of Technology, Kharagpur to deliver a seminar lecture organised by the Kharagpur Chapter, IEEE, USA on January 10, 1997.
- Bhattacharya, Bhargab B. (Electronics Unit) went to Hyderabad to attend the Tenth International Conference on VLSI Design (VLSI'97) as the Program Committee Chair during January 4-7, 1997.
- Chanda, Bhabatosh (Electronics and Communication Sciences Unit) visited (i) University of Washington, Dept. of Electrical Eng., Seattle, USA during May 15, 1995 - May 14, 1996 for working in computer vision and image database; (ii) Defence Research and Development Lab., DRDO, Hyderabad during February 5-8, 1997 and delivered a series of lectures and discussion with scientists of Image Processing Division and Signal Processing Division.
- Pal, S.K. (Machine Intelligence Unit) delivered invited talks at (i) the workshop-cum-exhibition on Development of Information Technology, Grand Hotel, Calcutta, August 7, 1996; (ii) Dept of Computer Science & Application, Regional Engineering College, Rourkela, August 21, 1996 and (iii) the 62nd annual Meeting of Indian Academy of Sciences, Jodhpur, November 1-3, 1996 in connection with his election as FASE, Dr. Pal delivered the Amal Roy Memorial Lecture for the year 1996 at the Computer Society of India, Calcutta Chapter on December 13, 1996. He has also visited the Central Food Technological Research Institute, Mysore, June 14, 1996 in connection with a CSIR meeting.
- Sarbadhikari, S.N. (Machine Intelligence Unit) delivered an invited talk at a Seminar on "Health society in the 21st Century - through technology" at the Asiatic Society (National Centre of Excellence), Calcutta on November 18, 1996.
- Sinha, S. (Machine Intelligence Unit) delivered an invited talk at the Saha Institute of Nuclear Physics, Calcutta on April 4, 1996. He also attended the Int. Conf. on Dynamics of Dynamical Systems, Bangalore, January 10-15, 1997.
- Dandapat, B.S. (Physics and Applied Mathematics Unit) visited Berhampur University to deliver a series of lectures on Advanced Computational Method in August 1996.
- Kumar, K. (Physics and Applied Mathematics Unit) (i) visited the Department of Physics, Tripura University during August 29-31, 1996 and delivered a lecture; (ii) visited the Institute of Physics, Bhubaneswar to deliver a lecture, April 1996; (iii) visited the Saha Institute of Nuclear Physics, Calcutta to deliver a lecture on Soft Condensed Matter.

- Majumder, Partha P. (Anthropology and Human Genetics Unit) (i) delivered an invited talk on "Molecular Evolution" at the Bose Institute, Calcutta, June 21, 1996, (ii) delivered an invited talk on "Human biological diversity and affinities in India and their relationships with cultural and geographical diversities" during the Indian Human Heritage Seminar of the Indian National Science Academy, New Delhi, 31.12.96 - 1.1.97, (iii) participated in the National Seminar on "Modelling Biological Systems: Concepts and Applications", Hyderabad, 8-9 January 1997 and delivered an invited talk on "Some concepts, models and methods in the study of human genetic diversity", (iv) Participated in a Workshop on Modelling in Biology, Puri, 13-19 January 1997 and delivered an invited talk on "Modelling and analysis of family data on complex human disorders", (v) delivered an invited talk on "Statistical criteria for selection of probes, setting up databases and analysis of RFLP results" in the Workshop on Recent Advances in DNA Profiling Technology, Calcutta, 25 January 1997.
- Majumder, A., Coondoo, D. and Chaudhuri, P. (Economic Research Unit) visited Banker's Training College, Reserve Bank of India, Mumbai, during December 16-20, 1996 and gave lectures on "Advanced Econometrics Techniques".
- Chakrabarti, S. (Economic Research Unit) gave a lecture on "Methodology and Economics of Treatment of Municipal Solid Waste" in a training course on "Technology for Municipal Solid Waste" organized by the Nodal Research Centre and Pollution Control Board, West Bengal on March 14, 1997.
- Kabraji, T. (Economic Research Unit) delivered a lecture entitled "On Strategic Entry-Deterrence" in the Refresher Course in Economics, Calcutta University, on April 5, 1996. He also gave some lectures on game theory and economic applications to the students of M. Phil. programme in Economics, Calcutta University, during February 1997.
- Sarkar, N. (Economic Research Unit) delivered four lectures on "Modelling with Financial Variables" in the UGC sponsored Refresher Course in "Economic Theory and Monetary and Financial Economics" Jadavpur University, Calcutta on February 20 & 25, 1997.
- Kumar, T. Krishna (Economic Analysis Unit) served as a Consultant in Reserve Bank of India, Bombay during December 1996.
- Devika, V. Apati (Documentation, Research and Training Centre) was invited as a Resource Person to the V.S. Krishna Library staff Training Programme, Andhra University, Vizag. He delivered special lectures on CDS/ISIS, February 4-9, 1997.
- Prasad, A.R.D. (Documentation, Research and Training Centre) (i) was invited as a Selection Committee Member for Visva Bank, Bangalore on 10th June 1996; (ii) was invited as a Resource Person to Mahatma Gandhi University, Kottayam. He delivered a lecture on Application of Artificial Intelligence to LIS, Sept.25-28, 1996; (iii) was invited as a Resource Person to Karnatak University, Dharwar, Dec.30, 1996 - Jan. 2, 1997, (iv) was invited as a Resource Person to the V.S. Krishna Library Staff Training Programme, Andhra University, Vizag. He delivered special lectures on CDS/ISIS, February 4-9, 1997.
- Ravichandra Rao, I.K. (Documentation, Research and Training Centre) (i) was invited by Mysore University Staff College, Mysore to deliver special lectures during April 10-12 and April 18-19, 1996 and also chaired Technical Sessions; (ii) was invited by USIS, Madras as a Panel Member for discussion on Efforts and Development in Resource sharing and Networking in India on July 18-19, 1996; (iii) was invited by IIM, Ahmedabad to participate in the Workshop on the Marketing of Information from August 14-16, 1996; (iv) was invited by INFLIBNET, Ahmedabad to attend the Programme Committee meeting of CALIBER'97, September 8, 1996; (v) was invited by NISSAT, New Delhi to attend the Scientometrics Meeting, September 17-20, 1996; (vi) was invited as a Program Co-Ordinator by Manipal Academy of Higher Education, Manipal (MAHE) and also chaired the Technical Session. He delivered special lectures to workshop participants, November 4-8, 1996. (vii) was invited by Mysore University, Dept. of Library and Information Science, Mysore to deliver a special lecture to MLIS students, December 18, 1996; (viii) was invited by NISSAT for

Scientometrics meeting held at NISSAT, New Delhi, February 4-8, 1997; (ix) was invited by Kurukshetra University to deliver a lecture on Library Automation as well as to deliver in inaugural address, February 25-26, 1997; (x) was invited by INFLIBNET for CALIBER'97 Workshop, Patiala, chaired a Technical Session to participate in the Panel Discussion and to present a paper, March 5-6, 1997.

Sectharna, S. (Documentation, Research and Training Centre) (i) was invited by Marathwada University, Aurangabad to deliver lectures May 5-9, 1996 at the UGC sponsored First Refresher course for Librarians and Information Professionals on Types of Information Services and Products, Parameters in the design and development of information services and products, Generation of Information services and products; (ii) was invited by Shivaji University, Kolhapur to deliver lectures on June 4-7, 1996 to the MLI&C students of the Vocational Course on Personnel Management, Current Developments in the field of Information Transfer, June 4-7, 1996; (iii) was invited by Dept. of Library Science, University of Calicut to deliver lectures on June '96 on Systems Analysis to the MLI&C students; (iv) was invited by Academic Staff College, University of Mysore, Mysore to deliver lectures on June 17-18, 1996 on Planning of Library and Information Services, Evaluation of Information Services and Products, June 17-18, 1996; (v) was invited by Mahatma Gandhi University, Kottayam to deliver lectures, Sept. 6-7, 1996 to the participants of the Refresher Course on Library Management on Information Transfer and Dissemination, Management of Information Centre, Sept. 6-7, 1996; (vi) was invited by Indira Gandhi National Open University, New Delhi to participate in the Expert Committee Meeting for Research Degree Programmes in Library and Information Science, Nov. 28-29, 1996; (vii) was invited by the Academic Staff College, University of Mysore to deliver lectures, Dec.30-31, 1996 on Collection Development, Management of Information Services on IT based environment, Dec.30-31, 1996; (viii) was invited as a Visiting Fellow by the Dept. of Library and Information Science, Marathwada University, Aurangabad, Jan.24 - Feb. 8, 1997 to deliver lectures on Systems Analysis, PERT/CPM, Information Transfer, Information consolidation and Repackaging, Jan 24 - Feb.8, 1997; (ix) was invited as the Chief Resource Person for the National Symposium on Generation of Information Services and Products, Aurangabad, Jan. 27-29, 1997, and also to give the Keynote Address; (x) was invited by the Dept. of Library and Information Science, Madras University to deliver lectures on February 17, 1997 and February 28, 1997 on Information Transfer, Information Consolidation, Marketing of Information Services and Products; (xi) was invited by the Dept. of Library and Information Science, Lucknow University to deliver special lectures on Systems Analysis, Manpower Management, Financial Management; (xii) was invited by SHPT School of Library Science, SNDT Women's University, Bombay to deliver lectures, March 15 and 17, 1997 on Information Repackaging, Resource Generation in Libraries, Performance Standards, March 15 and 17, 1997; (xiii) was invited by the Dept. of Library and Information Science, Bangalore University to deliver lectures, March 26, 1997 on Manpower Planning, Financial Management.

12. GENERAL ADMINISTRATION

Administrative Services Division

The Administrative Services Division at the headquarters at Calcutta caters to the various needs of the scientific workers of the Institute engaged in various scientific research and academic activities and provides them with necessary infrastructural facilities in their pursuit of excellence. The centres at Delhi and Bangalore, each having a number of science units are, by and large, self-sufficient in providing administrative support to the scientific workers. The division has different units in Calcutta as mentioned below :

Accounts Section : The Accounts Section keeps the accounts of all financial transactions made by the Institute and admits claims including personal claims preferred by workers and outsiders after proper check. This section is responsible for final closure of accounts and preparation of Income and Expenditure Account and Balance Sheet of each financial year. They are also to interact with the Statutory Auditors in the course of audit of final accounts. The Provident Fund Unit (PF) under this section maintains the accounts of provident fund of individual workers of the Institute and deals with PF loans and withdrawal and final payment of PF balance

Council Section : The Institute is a registered society with a large number of Ordinary and Life members. The Section maintains liaison with the members and satisfies their requirements including sending of Sankhyā, the Indian Journal of Statistics, published by the Institute, to the members of the Institute. The Section arranges holding of meetings of General Body, the Council, Finance Committee, Section 8(1) Committee etc. This section is attached to CAO's Office.

Director's Office and CAO's Office : Director is the principal executive officer of the Institute and the head of all its academic and administrative activities whereas Chief Administrative Officer (CAO) is in over-all charge of General Administration, Financial and Personnel Management in respect of Administrative Services Division. Both the offices are entrusted with the task of providing all help and support to these two very important functionaries of the Institute. They are required to maintain confidential records, issue circulars, interact with various research and administrative divisions and maintain liaison with outside centres and branches of the Institute.

Engineering and Electrical Maintenance Unit : The Unit is responsible for day to day maintenance besides supply of electricity and water in the buildings housing various divisions and staff quarters. This unit also takes up new constructions.

Estate Office : The Institute has a very big campus comprising buildings, ponds and vacant space. The Estate Office looks after all the estates and properties of the Institute and also maintains regular conservancy services.

Medical Welfare and Reimbursement Unit : The workers of the Institute are entitled to medical claims as per CSMA rules of the Government of India. Besides there is a small dispensary with facilities of consulting general physicians and specialists for the campus residents and also for the workers residing nearby. The medicines are supplied free. At present there are three regular doctors and several part-time specialist doctors attached to the dispensary. The Medical Reimbursement Unit is entrusted with the payment of all medical claims submitted by workers as per CSMA rules and the Medical Welfare Unit looks after the functioning of the dispensary with all attendant activities.

Personnel Unit : The Personnel Unit deals with all service matters like appointments, promotions, transfers, disciplinary action, redressal of grievances, retirements etc. in respect of all the workers of the Institute and maintains all records in connection thereto. The Retirement Benefit Cell attached to the Unit deals with the payment of retirement benefits to workers like pension, death-cum-retirement gratuity etc.

Public Relations Unit : All sorts of public relations activities are being carried out by the Unit on behalf of the Institute. During the year, the Unit arranged elaborate media coverage of (i) Seminar on 'Policy Implications based on National Family Health Survey, West Bengal on April 4, 1996, (ii) Special Seminar on 'The Role of the IMF in India and the World Economy' on November 4, 1996, (iii) Regional Mathematical Olympiad '96 on December 01, 1996, (iv) Foundation Day celebration of ISI on December 22, 1996, (v) Two-day conference on 'Economic Reforms in India' during January 6-7, 1997, (vi) Symposium on 'Item Response Theory' during February 18-19, 1997, (vii) Prof. P. C. M. Memorial Lecture series during February 18-20, 1997, (viii) SURDAC Symposium on 'Statistics as an Inter-Disciplinary Research : Methodology and Data Analysis' during February 7-8, 1997, (ix) Seminar on 'Statistical Challenges in observational studies related to chronic diseases' on March 25, 1997, (x) First National Workshop on 'Statistical and computational Intervention in Language in a plural society : The case of India during March 12-13, 1997, (xi) Annual Convocation of the Institute and the International Statistical Education Centre held on March 31, 1997.

The Unit issued a number of press releases during the year in connection with various scientific programmes/research activities. City tour for ISEC trainees was organised by the Unit on July 6, 1996.

Another important job of the Unit is to prepare and publish the Annual Report each year under the guidance of an Editorial Board and arrange for its distribution to different Universities in India and abroad and also to the Government department. Distribution of ISI News Letter throughout the Country is also done by the Unit.

Publication and Printing Unit : The Unit was formed in August 1991 when the Statistical Publishing Society was formally taken over by the Institute. It undertakes printing and binding of all materials, including Sankhyā (Series A & B). It also looks after the distribution of Sankhyā world wide. It also undertakes printing and binding works of special nature from outside agencies. Steps are being taken to modernise the existing press by converting the existing old Printing Press to an offset one. In fact, the Council in its meeting held on 14 February 1996 decided to constitute a committee by Director to prepare a comprehensive plan for modernisation of the existing letter press of the unit as suggested by a Policy Advisory Committee set up for the purpose. The Committee has made a comprehensive modernisation plan which is under implementation in phases. The Unit prepares separate accounts for it.

Binding Unit : The Institute has a large library with books and journals which are required to be bound regularly. Besides, various research divisions bring out research proposals, administrative division brings out book-lets on budget for presentation to the Ministry. All such and many other documents are bound throughout the year in the Binding Unit.

Central Office : The Central Office is in charge of receipts and despatch/distribution of all correspondence, circulars/office orders etc. of the Institute. Arrangements for maintenance and services of all typewriters and duplicators of the Institute are centrally made by this unit.

Central Stores Unit : All stationery and stores articles including furniture required for use in various divisions of the Institute are procured through Central Stores Unit. They also procure and store materials required for day to day maintenance of building, water and electric supply. A small Tailoring Unit is attached to it.

Security Unit : Security Unit is entrusted with the important task of maintaining security of the vast campus of the Institute and its properties. The Unit is supervised by an ex-army man of the rank of a Major.

Telephone Unit : The Unit manages two electronic exchanges installed by Crompton and Greaves Ltd in the Institute's premises. The main one (NE-1100) is housed at 202, B.T. Road and a small one (NE 20M) is housed at 205 B.T. Road. The two are interconnected. The NE 1100 is manned by operation during working hours and works in automatic mode otherwise. NE (20M) operates in automatic mode.

Transport Unit : Besides a fleet of vehicles, the Institute has four buses and an ambulance. The vehicles are for use by the visiting scientists and dignitaries and by the workers in carrying out the activities of the Institute. The buses are used for transporting worker from eastern and southern part of Calcutta and its suburbs. The ambulance is used to carry ailing workers or members of their families to and from hospital for emergency treatment on recommendation of the doctors attached to Medical Welfare Unit. The Transport Unit looks after the use and maintenance of the vehicles.

Apart from the Units mentioned above, there are some small cells dealing with Internal Audit, Budget, Import, Travel and House Building Advance and take care of the specific needs of the Institute.

The Administrative Services division also looks after the running of hostels for students, research scholars and International Statistical Education Centre (ISEC) trainees and also the running of Canteen for the workers and students of the Institute. It also maintains the Guest House to accommodate scientists and academicians, both from inside and outside the country, who visit the Institute for various academic pursuits. As mentioned earlier, the Division has two main Centres located at Delhi and Bangalore. The other outlying Units numbering eight are controlled directly by the headquarter at Calcutta. The Administrative Services Division takes the responsibility for all new construction activity of the Institute at its headquarter and also at outlying centres/branches. A brief report on the construction activity in the current year is given later.

The activities of the Administrative Services in the two Centres, namely Delhi and Bangalore, and in other outlying branches of the Institute are more or less the same but in a much smaller scale. Depending on the needs of the branches/centres the number of Units have been truncated and merged into fewer units.

2. Staff of the Institute

The Government of India agreed that ISI might continue with the staff strength, the various of posts, scales of pay, promotional policies and other service condition as was existing in the past before imposing embargo. They also allowed revision of the payscales as approved by the Council for all categories including categories of posts for non faculty workers where certain anomalies existed. As a result of the clearance from the Government, the Institute has undertaken measures to recruit workers in various categories where there are acute shortages.

The following senior members of the staff worked in the posts indicated against their names during the year.

Director

1. S.B. Rao

Dean of Studies

2. Joseph Mathew upto 17.9.1996
P.S.S.N.V.P. Rao from 18.9.1996

Head, Delhi Centre

3. Atul Sarma

In-Charge, (Administration and Accounts), Bangalore

4. T.S. Arthanari, upto 14.6.1996
B.K. Pal from 15.6.1996 to 17.9.1996

Acting Head

B.K. Pal from 18.9.1996

Chief Administrative Officer

5. G.H. Mandal

New Appointments

List of workers (Scientific/Technical/Administrative) who joined the Institute during the year :

1. Goutam Mukherjee, Lecturer
2. Chandana Das, Lecturer
3. Devika V. Aplagiri, Lecturer
4. Samrajit Bose, Lecturer
5. Amartya Kr. Dutta, Lecturer
6. Debdulal Dutta Roy, Lecturer
7. Amitava Chowdhury, Lecturer
8. Surajit Chatterjee, Lecturer
9. B. V. Rajaram Bhat, Associate Professor
10. Suman Majumder, Lecturer
11. Umapada Pal, Programmer
12. B. Uma Shankar, D.P. Technician
13. Rabindra Narayan Das, D.P. Technician
14. Susmita Mukhopadhyay, Lecturer

Retirements/Resignations/Death

List of workers (Scientific/Technical/Administrative) who retired/resigned/died from the services of the Institute during the year :

1. Pranab Majumder, Research Assistant
2. G. Krishna Prasad, Technical Officer, SQC, Gr.III
3. K. R. Parthasarathy, Distinguished Scientist
4. N.R. Srinivasan, Associate Professor
5. Mihir Kumar Rakshit, Professor
6. V.S. Sunder, Professor
7. Kapil H. Paranjape, Professor
8. Partha Praum Pramank, System Analyst Gr.II
9. Sali Kumar Guha, Executive Officer
10. L.R. Jain, Associate Professor
11. S. Mohamad Ibrahim, Technical Officer, SQC, Gr.I
12. A. N. Sarma, Lecturer (died)
13. Dilip Mukherjee, Professor
14. Tapas Das, Executive Officer (died)
15. Kanailal Bose, Assistant Librarian
16. Kalyan B. Bhattacharya, Assistant Librarian
17. Sunil Krishna Pal, System/Numerical Analyst Gr.I
18. T.S. Arthanari, Sr. Technical Officer,
19. Sugata Marjit, Professor
20. V. Narayan Iyer, Technical Officer, SQC, Gr.I
21. Pankaj Kr. Chatterjee, Sr. Accounts Officer (died)

Numbers of workers in various groups as on 31 March, 1997 :

(i) Scientific and Technical Group -	501
(ii) Non-Scientific Group	- 1055

Total :	1556

Budget and Finance

For the year 1996-97, the Institute's budget was estimated to be Rs.1824.48 lakhs and Rs.817.214 lakhs towards Non-Plan and Plan respectively at the BE stage. The Govt. after considering the report of the Section 8(1) Committee approved a sum of Rs.1661.05 lakhs including internal receipts and Rs.450.00 lakhs for Non-Plan and Plan expenditure respectively. At the Revised Estimate stage, the Institute sought for a grant of Rs.1826.95 lakhs and Rs.495.00 lakhs in Non-Plan and Plan estimates respectively. The Govt. approved a sum of Rs.1826.95 lakhs on Non-Plan, the Plan RE allocation was fixed at Rs.450.00 lakhs. The expenditure during the year under report was well within the budget allocation sanctioned by the Government. The Audited Annual Accounts of the Institute for the year 1996-97 have been furnished in part IV of this report.

Land and Construction

The following major activities were undertaken by the Institute during 1996-97.

Calcutta

New Guest House

Both Civil and Electrical works of New Guest House have been completed in all respects. Final bill for the same is yet to be received.

Construction of quarters'

Construction of 16 'D' type quarters has been completed in all respects. The quarters have been allotted to the eligible workers.

Interior works of New Guest House

Consultant has been appointed for decoration work of New Guest House. Total estimated value of the work is about Rs.50 lakhs. The work is progressing and the entire work including electrical, airconditioning etc is expected to be completed by October 1997.

A type quarters at 205 B.T. Road

Consultant has been engaged for construction of A type quarters. Conception design has been approved by the competent authority. Arrangements are being made for soil testing which is expected to be completed soon.

Delhi

The construction work of Administrative Building has been entrusted to CPWD.

Bangalore

Addition to the Hostel Block has been taken up for construction. The work is in progress.

SOCIETY TYPE ACTIVITIES

Membership : April 1996-March 1997

During the period 169 persons were elected as Ordinary Members of the Institute and 15 Ordinary Members became Life Members.

The membership position as on 31st March 1997 is as follows :

Ordinary Members	- 1451
Life members	- 433
Institutional members	- 14
	<hr/>
Total :	1898

Finance Committee Meeting : The Finance Committee met twice, on 19 June 1996 and 13 November 1996, during the period under report. Apart from taking various decisions on financial matters, the committee recommended RE 1996-97 and BE 1997-98 (Plan and Non-Plan) in their meeting on 19 June 1996 and considered and recommended the Annual Report including Audited Statement of Accounts for the year 1995-96 in their meeting held on 13 November 1996.

Council Meeting . The Council met five times during the period under report to take decisions on administrative and scientific matters. In the Council meeting held on 24 June 1996, the budget proposals both for Plan and Non-Plan (RE for 1996-97 and BE for 1997-98) as recommended by the Finance Committee in its meeting held on 19 June 1996 could not be considered for compelling reasons. The approval was obtained by circulation among the members of Council in consultation with the Chairman. In the meeting dated 28 November 1996 the Annual Report including the Audited Statement of Accounts for the year 1995-96 were considered by the Council and was approved. During the year under report, the election to various offices of the Council was held. The new Council took charge on 18 September 1996.

A list containing the names of the President of the Institute, Chairman and members of the Council of the Institute and also a list of members of different committees constituted by the Council are given elsewhere in the report.

Annual General Meeting : The General Body of the Institute met on 10 September 1996 and 29 November 1996 during the period under report. The Annual Report of the Institute for the year 1995-96 and Audited Statement of Accounts for the year 1995-96 together with the Auditor's comments and replies of the Administration thereto were adopted in the meeting of the General Body on November 29, 1996.

15. LIST OF MEMBERS OF THE ACADEMIC COUNCIL AND OF DIFFERENT COMMITTEES OF THE INSTITUTE AS ON 31 MARCH 1997

List of Members of the Academic Council of the Institute

1. S.B. Rao, Director - Chairman
2. P.S.S.N.V.P. Rao, Dean of Studies - Convener

Theoretical Statistics and Mathematics Division

3. T. Chandra, 4. Rana Barua, 5. Smarjit Bose, 6. J.K. Ghosh, 7. T.J. Rao, 8. B.V. Rao, 9. A.R. Rao, 10. A.K. Roy, 11. G.M. Saha, 12. Bikash Sinha, 13. Y.R. Sharma, 14. T.P. Tripathi, 15. H. Sarbadhikari, 16. S.M. Srivastava, 17. K.K. Mukherjee, 18. A. Mukherjee, 19. Arup Bose, 20. Raian Dasgupta, 21. R.B. Bapat, 22. R. Bhatia, 23. Aloke De, 24. R.L. Karandikar, 25. S.C. Kochar, 26. T. Parthasarathy, 27. B.L.S. Prakasa Rao, 28. K.B. Sinha, 29. K. Balasubramanian, 30. K.P.S.B. Rao, 31. A. Sitaram, 32. S. Thangavelu, 33. G. Misra, 34. Kapil H. Paranjape, 35. S. Ramasubramaniam, 36. N.S.N. Sastry, 37. T.S.S.R.K. Rao, 38. S. Natarajan, 39. Bhaskar Bagchi, 40. K. Ramamurthy, 41. P.L. Mutburamalingam, 42. T.V. Hanurav.

Applied Statistics Division

43. Ajoy Kr. Adhikari, 44. Shibdas Bandyopadhyay, 45. S.R. Chakraborty, 46. Arijit Choudhuri, 47. Anup Dewanji, 48. Ayanendra Nath Basu, 49. T. Krishnan, 50. A.C. Mukhopadhyay, 51. Asish Sen Gupta.

Social Sciences Division

52. Sanjit Bose, 53. Satya R. Chakraborty, 54. D. Coondoo, 55. Pradip Maity, 56. Robin Mukherjee, 57. Abhinav Sarkar, 58. Monoranjan Pal, 59. B.N. Bhattacharya, 60. Parkash Chander, 61. D. Dasgupta, 62. Bhaskar Dutta, 63. Subhasish Gangopadhyay, 64. Dilip Mukherjee, 65. P.N. Mukherjee, 66. Atul Sarma, 67. Sayaj Prakash Das, 68. N.S.S. Narayana, 69. T. Kristina Kumar.

Biological Sciences Division

70. Anjana Dewanji, 71. Barun Mukhopadhyay, 72. Amit Basu, 73. P.P. Majumder, 74. K.C. Malhotra, 75. D.K. Bagchi, 76. P.K. Tapaswi, 77. S. Matai.

Physics and Earth Sciences Division

78. B.S. Dandapat, 79. B.N. Mandal, 80. B.S. Majumdar, 81. Raj Kumar Roychowdhury, 82. Subroto Bhattacharya, 83. Sisir Roy, 84. Krishna Kumr, 85. A.K. Choudhuri, 86. T.S. Kutty, 87. D.K. Rudra.

Computer and Communication Sciences Division

88. Probal Sengupta, 89. Susmita Mitra, 90. Sankar Pal, 91. M.K. Kundu, 92. Jaysree Duttagupta, 93. B.B. Bhattacharya, 94. M.K. Chakrabarti, 95. B.P. Sinha, 96. J. Das, 97. A.K. Dey, 98. K.S. Roy, 99. B.B. Choudhury.

Statistical Quality Control and Operations Research Division

100. T.K. Chakrabarty, 101. S.K. Majumdar, 102. S.P. Mukherjee, 103. R.J. Pandey, 104. D.T. Ghosh, 105. Anup Majumdar, 106. S. Sengupta, 107. Ranjan Saha, 108. Sadhan Chakrabarty, 109. S.S. Handa, 110. S.R. Mohan, 111. Arvind Seth, 112. K.N. Anand, 113. T.S. Arthanari (upto 18.2.97), 114. A.K. Choudhuri, 115. Kalyan Choudhuri, 116. B.K. Pal, 117. Y.R. Rao, 118. N.T.V. Ranga Rao, 119. J. Venkatesappa, 120. P. Bhimasankaram, 121. P. Lakshmanan, 122. C.Y. Krishnamurthy, 123. V. Gopalan, 124. M.V. Asokan.

Library, Documentation, and Information Sciences Division

125. Chitta Bhattacharya, 126. I.K. Ravichandra Rao, 127. S. Seetharama.

Computer and Statistical Services Centre (CSSC)

128. Aditya Bagchi, 129. S.C. Kundu.

Member-Secretary, ISEC

130. Parimal Mukhopadhyay

Secretary, Examination Committee

131. A.C. Mukhopadhyay

List of Members of different Committees of the Institute

(A) Finance Committee

(1) Director (Ex-officio Chairman), (2) Shri A.K. Adhikari, (3) Dr. D.K. Bose, (4) Dr. M.K. Chakrabarti, (5) Dr. Rajkumar Roy Chowdhury (6) Shri A.K. Ghosh, (7) Dr. S. Matai (8) Shri Sashi Kama Mishra, (9) Dr. Robin Mukherjee, (10) Dr. P.N. Roy, (11) Dr. A.R. Rao, (12) Dean of Studies, (13) Chief Administrative Officer, (14) Head, Delhi Centre or his nominee, (15) In-Charge, Bangalore Centre or his nominee, (16) Govt. Representative (Deptt. of Statistics), (17) Govt. Representative (Ministry of Finance), (18) Head, SQC & OR Division, (19) Chief Librarian, (20) In-charge, Internal Audit, (21) Shri S.S. Panja (Non-Member Secretary).

(B) Editorial Committee

Editors : Sankhyā A and B

Dr. S. Dasgupta, Dr. J.K. Ghosh

Co-Editors : Sankhyā A

Prof. P.K. Bhattacharya, Dr. Sujit Kumar Basu, Dr. Anup Bose, Dr. Anirban Dasgupta, Dr. Mohan Delampadi, Dr. R.L. Karandikar, Dr. Hirmlal Koul, Dr. Kesar Singh.

Co-Editors : Sankhyā B

Dr. Bimal Kumar Sinha, Dr. Dipankar Coondoo, Dr. Alope Dey, Dr. S.R. Mohan, Dr. T.J. Rao, Dr. Anup Dewanji.

Managing Editors

Dr. Anup Bose (*Sankhyā*); Prof. T.J. Rao (*Sankhyā* B)

Advisory Members

Prof. Aman Ullah, Prof. D. Dasgupta, Prof. G. Jogesh Babu, Prof. G. Kallianpur, Prof. K.R. Parthasarathy, Prof. B.L.S. Prakasa Rao, Dr. C.R. Rao, Dr. J. Roy, Prof. P.K. Sen, Prof. J. Sethuraman, Prof. N. Bhattacharyya, Prof. R.R. Bahadur, Prof. S.K. Chatterjee, Prof. S.K. Mitra, Prof. S.R.S. Varadhan, Prof. Malay Ghosh.

(D) Works Advisory Committees

(a) Calcutta

1. Dr. P.N.Roy (Chairman), 2. Dr. M. K. Chakrabarti (Vice-Chairman), 3. Shri A.K. Adhikar, 4. Dr. Somesh Bagchi, 5. Dr. T.S. Kuttiv, 6. Shri Anup Majumder, 7. Dr. Partha P. Majumder, 8. Dr. Robin Mukherjee, 9. Dr. P.S.S. N.V.P. Rao, 10. Chief Administrative Officer, 11. Shri A.K. Ghosh, 12. Shri Sashi Kanta Mishra, 13. In-charge, Engg. Unit, 14. Outside Experts (Civil Engineer), 15. Outside Expert (Architect), 16. Shri Anjan Mookherjee (Convener).

(b) Delhi

1. Shri S.C. Bose Mullick (Chairman), 2. Shri A.P. Jain, 3. Shri T.S.R. Ratnam, 4. Shri B.K. Sen, 5. Head, Delhi Centre, 6. Prof. T. Parthasarathy, 7. Dr. S.C. Kochar, 8. Prof. Dipankar Dasgupta, 9. Shri B. Majumder, 10. Shri S.S. Handa, 11. Chief Administrative Officer, 12. Administrative Officer, Delhi Centre, 13. Shri D.N. Sabharwal (Convener).

(c) Bangalore

1. Prof. G. Bhattacharya, (Chairman), 2. Prof. M.K. Prapulla Chandra, Head, Deptt. of Civil Engineering, R.V. college, Bangalore, 3. Head, Bangalore Centre, 4. Chief Engineer (C & B), Govt. of Karnataka or his nominee, 5. Outside Expert (Architect), when needed, 6. Head, SQC & OR, Bangalore Centre, 7. Chief Administrative Officer, 8. Head, DRTC, Bangalore, 9. Head, Stat-Math Unit, Bangalore, 10. Head, Economic Analysis Unit, 11. Shri H.V. Anantharamiah (Convener).

(E) Ph.D./D.Sc. Committee

1. Director (Chairman), 2. Prof. Pradip Maiti, 3. Prof. Sanjit Bose, 4. Prof. Prakash Chander, 5. Prof. Partha P. Majumder, 6. Prof. G. Misra, 7. Prof. A.C. Mukhopadhyay, 8. Prof. Sankar Kr. Pal, 9. Prof. B.V. Rao, 10. Prof. A.K. Roy, 11. Prof. B.P. Sinha, 12. Prof. B.K. Sinha, 13. Dean of Studies, 14. Prof. A.R. Rao (Convener).

(F) Technical Advisory Committees of different Divisions

I. Theoretical Statistics and Mathematics Division

1. Director (Chairman), 2. Prof. M.G. Nadkarni, Centre for Advanced Study in Mathematics, University of Bombay, Vidyanagari Marg, Vidyanagari, Bombay-400098, 3. Prof. S.K. Basu, Indian Institute of Management, Diamond Harbour Road, Joka, South 24 Parganas, 4. Prof. J.V. Deshpande, Deptt. of Statistics, University of Pune, Ganeshkhind, Pune-411007, 5. Prof. M. Srechari, M.S. University of Baroda, Baroda, 6. Prof. R. Sridharan, Tata Institute of Fundamental Research, Bombay, 7. Prof. U.B. Tcwan, Indian Institute of Technology, Kanpur, 8. Prof. K. Vishwanath, University of Hyderabad, Hyderabad, 9. Prof. B.K. Sinha, Professor-in-Charge (Convener).

II. Applied Statistics Division

1. Director (Chairman), 2. Dr. S.S. Srivastava, DG, CSO, Deptt. of Statistics, Govt. of India, Sardar Patel Bhavan, Sansad Marg, New Delhi-110001, 3. Prof. S. Pattanayak, Sambalpur University, Sambalpur, 4. Dr. P.S.S. Sundar Rao, Schiefelin Leprosy Research Centre, Karigin, North Arcot District, Pin-632102, 5. Prof. J.V. Deshpande, Department of Statistics, University of Poona, Ganeshkhind, Pune 411072, 6. Prof. S.K. Basu, Indian Institute of Management, Calcutta, 7. Dr. Prem Narain, I.A.S.R.I., Delhi-110012, 8. Shri A.K. Adhikari, Professor-in-Charge (Convener).

III. Physics and Earth Sciences Division

1. Director (Chairman), 2. Prof. A.N. Mitra, FNA, University of Delhi, Delhi-7, 3. Prof. Bikas Sinha, Director, Variable Energy Cyclotron Centre, IAF, bidhannagar, Sector-1, Calcutta-700064, 4. Prof. Kamreshu, School of Computer Science, Jawaharlal Nehru University, New Delhi-110016, 5. Prof. Pradip Neogi, Indian Institute of Technology, Kharagpur, Midnapur - 721302, 6. Prof. Saurindra Nath Sen, D.Sc., FNA, 364/18 N.S.C. Bose Road, Calcutta-45, 7. Dr. S.K. Acharyya, Director General, Geological Survey of India, 27 Jawaharlal Nehru Road, Calcutta-700016, 8. Prof. Ashoke Sahni, Punjab University, Chandigarh-160014, 9. Prof. D.K. Chatteraj, D.Sc., FNA, Jadavpur University, Calcutta-700032, 10. Prof. Supriya Sengupta, Eminent Professor, Deptt. of Geology and Geophysics, IIT, Kharagpur, 11. Prof. S. Bhattacharya, Professor-in-Charge (Convener).

IV. Biological Sciences Division

1. Director (Chairman), 2. Prof. A.B. Roy, Jadavpur University, Calcutta-700032, 3. Prof. Ajay Chatterjee, University of College of Science and Technology, Calcutta-700009, 4. Prof. Anil Gupta, I.I.M., Ahmedabad, 5. Prof. B.M. Das, Dibrugarh University, Dibrugarh, 6. Prof. B.P. Chatterjee, I.A.C.S., Jadavpur, Calcutta-700012, 7. Prof. Dipika Mohanty, Institute of Immunohaematology (I.C.M.R.), Mumbai, Mumbai-400012, 8. Prof. G.S. Palival, H.N.B. Garhwal University, Srinagar-246174, Pauri (U.P.), 9. Prof. J.C. Mishra, I.I.T., Kharagpur, Kharagpur-721302, 10. Prof. Kamala Krishnaswamy, National Institute of Nutrition (I.C.M.R.), Hyderabad-500007, 11. Prof. Mahadeb Adhikari, AE 829, Salt Lake, Calcutta-700064, 12. Prof. R.K. Mandal, Bose Institute, Calcutta-700054, 13. Prof. R.N. Joshi, Baba Sahib Ambedkar Marathwada University, Aurangabad-431004, 14. Dr. Ranjit Kumar Bhattacharya, Anthropological Survey of India, Calcutta-700007, 15. Prof. Samir Bhattacharya, Viswa Bharati University, Santiniketan-731235, 16. Prof. V. Nannundiah, Indian Institute of Science, Bangalore-560012, 17. Prof. S. Matai, Professor-in-Charge (Convener).

V. Social Sciences Division

1. Director (Chairman), 2. Prof. Anjan Mukherjee, Jawaharlal University, New Delhi-110067, 3. Prof. K.L. Krishna, Delhi School of Economics, Delhi 110007, 4. Prof. Alok Roy, Indian Institute of Management, 5. Prof. B. Ramkrishna Reddy, Telugu University, Hyderabad-500007, 6. Prof. Pabitra Sarkar, Rabindra Bharati University, Calcutta-700050, 7. Prof. Ashish Bose, I-1777, Chhita Ranjan Park, New Delhi-110019, 8. Prof. K.B. Pathak, International Institute for Population Sciences, Mumbai-400088, 9. Prof. Arun Kumar Sen, Delhi University, Delhi-110007, 10. Prof. Amitava Chatterjee, 35, Biswambhar Banerjee Lane, Konnagore 712235, Hooghly, 11. Prof. Barun De, Maulana Abul Kalam Azad Institute for Central Asian Studies, Calcutta-700019, 12. Prof. Ramkrishna Mukherjee, 17/3, Moore Avenue, Calcutta 700040, 13. Prof. Anindya Sen, I.G.I.D.R., Mumbai, 14. Prof. B.N. Bhattacharya, Professor-in-Charge (Convener).

VI. Computer & Communication Sciences Division

1. Director (Chairman), 2. Prof. B.L. Deekshatulu, FNA, N.R.S.A., Hyderabad-500037, 3. Prof. B.R. Nag, FNA, Calcutta University, Calcutta-700009, 4. Prof. Somenath Biswas, I.I.T., Kanpur-208106, 5. Dr. B.M. Reddy, FNA, National Geophysical Research Institute, Hyderabad-500007, 6. Dr. S.S. Agarwal, C.E.E.R.I., New Delhi, 7. Prof. Mohit Kumar Ray, Jadavpur University, Calcutta-700032, 8. Prof. A.K. Majumder, I.I.T., Kharagpur-721302, 9. Prof. A. Pal, I.I.T., Kharagpur-721302, 10. Prof. L.M. Patnaik, FNA, I.I.Sc., Bangalore-560012, 11. Prof. V.V.S. Sharma, FNA, Tata Research Development & Design Centre, Pune-411001, 12. Prof. S.C. Datta Ray, FNA, I.I.T., Delhi-110016, 13. Prof. P.V.S. Rao, FNA, T.I.F.R., Mumbai, 14. Dr. M.K. Chakrabarti, Professor-in-Charge (Convener).

VI. Statistical Quality Control and Operations Research Division

1. Director (Chairman), 2. Mr. S.N. Ray, Department of Industries, W.B., Calcutta, 3. Mr. Tapan Mitra, Chairman, INDAL, Calcutta, 4. Dr. S.K. Bnsu, I.I.M., Calcutta, 5. Mr. Dipankar Dutta Gupta, Bengal Chamber of Commerce, Calcutta, 6. Dr. S.P. Mukherjee, Calcutta University, 7. Dr. Annotam Ghosh, General Manager, Initiating Explosive System, Calcutta, 8. Sri G. Gandhi Prasad, Whirlpool Corporation, Faridabad, 9. Shri Anup Majumder, Head (Convener).

VII. Library Documentation and Information Sciences Division

1. Director (Chairman), 2. Dr. Bhubaneswar Chakraborty, Head, Deptt. of Library and Information Sciences, Calcutta University, 3. Dr. Pulin Barua, Burdwan University, Burdwan, 4. Shri Chitrabhanu Sen, Librarian, Asiatic Society, Calcutta 700016, 5. Shri A.C. Mitra, Director, CALIBNET, Regional Computer Science Building, Calcutta-700032, 6. Prof. K.S. Raghavan, University of Madras, Chennai-600005, 7. Shri J.C. Chowdhury, DNSDOC, Calcutta, 8. Shri Chitta Bhattacharya, Chief Librarian (Convener).

The Editorial Board gratefully acknowledges the help and assistance rendered by the Computer personnel attached to the CAO's Office, the Public Relations Unit, the Publication & Printing Unit, the Reprography Unit and the faculty Members of the Institute in preparing this Annual Report.

INDIAN STATISTICAL INSTITUTE

SIXTYFIFTH ANNUAL REPORT : 1996-97

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INDIAN STATISTICAL INSTITUTE

Part IV. Statement of Accounts and Auditors' Report for the year 1996-97

AUDITORS' REPORT

We have audited the attached Balance Sheet of Indian Statistical Institute as at 31st. March, 1997, of (a) General Fund and (b) Other Funds and the annexed Income & Expenditure Account for the year ended on that date.

The Balance Sheet and the Income and Expenditure Account as referred to above and as produced before us for verification are in agreement with the books of accounts and records maintained by the Institute.

Special attention is invited to Schedule X, Note 1-Fixed Assets, Note 4-Loans and Advances, Note 5.1 Adml. D. A. Deposit, Note 7.1 Medical Reimbursement, Note 7.3 Bonus and a portion of D.A. and our observations in Annexure forming part of this Report.

Subject to the above, in our opinion and according to the information and explanations given to us, the said accounts read with the Notes on Accounts (Schedule X) give a true and fair view.

(i) in the case of Balance Sheet, of the state of affairs of the Institute as at 31st March, 1997.

(ii) in the case of Income & Expenditure Account of the excess of Income over expenditure of the Institute for the year ended on that date.

P-17, Mission Row Extn.
Calcutta-700 013.

The 26th September, 1997

For B. C. KUNDU & Co.
Chartered Accountants

S. N. MUKHOPADHYAY
Partner

INDIAN STATISTICAL INSTITUTE

		BALANCE SHEET			
As at 31st March 1966 No. P.	Fund and Liabilities	As at 31st March 1967 No. P.	As at 31st March 1967 No. P.		
	1. GENERAL FUND:				
22,51,40,170.31	As per Schedule VII			22,51,40,170.31	
	2. OTHER FUNDS:				
	As per Schedule IV Contra (excluding Directors Contribution Fund I.S.I. Cont. Provident Fund and General Provident Fund)			7,85,34,601.40	
6,94,69,661.43					
	3. GRANT-IN-AID FOR FLOOD ADVANCE TO STAFF:				
7,20,000.00	As per last account			7,20,000.00	
	3.1 GRANT-IN-AID FOR HOUSE BLDG. ADVANCE TO STAFF:				
	As per last account	82,50,000.00			
82,50,000.00	Add: received during the year	5,00,000.00			
			88,50,000.00		
19,83,861.57	3.2 INTEREST ON HOUSE BUILDING ADVANCE REALISED FROM STAFF:	16,64,628.71		64,14,828.71	
	4. DEPOSITS AND OTHER LIABILITIES:				
1,80,69,585.26	As per Schedule VIII			2,06,18,124.32	
81,058.53	4.1 ADDITIONAL EMOLEMENTS COMPULSARY DEPOSIT:			81,058.53	
	5. EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF PLAN REVENUE GRANT:				
5,20,718.50	As per Schedule IXB			5,16,281.40	
	6. EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF MISC. PROJECT ACTIVITIES:				
33,88,518.07	As per Schedule V			31,40,546.18	
	7. EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF GRANT RECEIVED FROM GOVERNMENT OF INDIA (NON-PLAN)				
551.57	For the year 1964-65		551.57		
	For the year 1966-67	1,22,517.01		1,23,068.58	
	8. EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF PLAN CAPITAL:				
3,22,781.26	As per Schedule IX				
	9. NOTES ON ACCOUNTS:				
	As per Schedule X enclosed				
41,82,16,874.40				47,19,96,512.34	

P-17, Mission Row Extc.
Calcutta-700 013
26th September, 1967

S. SENGUPTA
Accounts Officer

S. S. PANDA
Accounts Officer

INDIAN STATISTICAL INSTITUTE

INCOME AND EXPENDITURE ACCOUNT

Previous Year			Expenditure	Current Year					
Plan	Non-Plan			Plan	Non-Plan		Plan	Non-Plan	
Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.
SALARY AND ALLOWANCES									
84,10,830.00	10,69,97,229.41	1.	Salary & Allowances	832,210.00	11,89,17,881.71				
—	14,60,6,517.09	1.1	Pension, graded relief & commuted value of Pension	—	1,70,44,484.29				
11,75,330.00	13,65,909.85	2.	Overtime Allowances	9,38,370.00	11,92,468.14				
—	61,237.70	3.	Children Education Allowance	—	26,091.99				
—	9,47,884.83	4.	Employer's Contribution to Provident Fund	—	9,02,210.22				
—	38,99,289.99	5.	Gratuity Payment	—	42,40,443.93				
3,93,450.00	1,94,011.59	6.	Visiting Professors, Foreign Scientists, Fellows etc.	4,31,850.00	2,87,091.59				
2,30,620.00	6,180,832.36	7.	Scholarship, Stipend and other assistance to trainees	73,500.00	57,57,886.18				
NON SALARY ITEMS									
—	6,36,406.06	8.	Leave Travel Concession	—	13,78,243.06				
1,32,105.00	20,38,055.04	9.	Medical Reimbursement and Welfare to Staff, Students, Research Scholars etc.	1,17,000.00	28,27,440.75				
21,36,780.00	1,807,587.60	10.	Travelling Expenses	16,02,720.00	21,71,664.80				
2,09,826.00	6,31,743.15	11.	Printing and Publication	3,30,110.00	7,90,178.70				
4,62,100.00	2,91,460.99	12.	Society type activities Seminar and Conference etc.	4,12,735.00	3,25,742.78				
53,74,960.00	79,31,428.00	13.	Books, Journals, etc.	83,70,105.00	83,38,181.23				
16,87,120.00	36,18,151.60	14.	Repairs, Replacement and Maintenance of Office Equipment, Computers and accessories etc.	20,55,070.00	35,31,636.38				
17,22,780.00	38,84,253.18	15.	Stationeries Consumable Stores, Advertisements, Insurance, Labour charges, Conveyance, Examination expenses and petty expenses	20,15,860.00	44,54,634.22				
<u>1,56,37,600.00</u>	<u>16,52,21,907.22</u>			<u>1,71,77,000.00</u>	<u>17,36,72,878.27</u>				

INDIAN STATISTICAL INSTITUTE

INCOME AND EXPENDITURE ACCOUNTS

Previous Year				Expenditure	Current Year			
Plan Rs.	P.	Non-Plan Rs.	P.		Plan Rs.	P.	Non-Plan Rs.	P.
1,58,37,600.00		15,69,81,967.28		Brought Forward ..	1,71,77,000.00	17,86,73,619.87		
601,240.00		13,59,096.57	18.	Postage and Telephone	7,31,205.00	17,48,431.51		
31,79,560.00		8,46,33,55,40.	161.	Electricity Charges	23,73,650.00	4,535,944.22		
—		49,952.00	17.	Audit Fees and Expenses	—	51,323.00		
—		1,00,235.50	16.	Interest and Bank Charges	—	1,34,168.55		
—		16,79,817.45	19.	House Rent and Taxes	—	15,87,933.44		
—		14,17,029.58	20.	Repair and Maintenance of Building, Land etc. Petty construction etc. ..	—	18,11,705.48		
3,63,830.50		9,81,033.67	31.	Transport Expenses	4,18,370.00	9,52,993.80		
5,03,080.00		7,31,182.34	22.	Workers' and Students' Welfare and amenities (excluding medical expenses)	2,30,540.00	8,03,802.52		
7,16,340.00		3,92,060.25	23.	Laboratory and Reprography Stoves, consumables, Tools and minor accessories ..	14,82,610.00	4,76,873.34		
45,060.00		46,478.78	24.	Expenditure of Giridih Agricultural Farm	20,550.00	29,519.17		
—		11,515.50	25.	Expenses for National Professor	—	—		
5,410.00		—	26.	Excess of Income over Expenditure transferred to Balance Sheet	3,975.00	1,22,517.01		
<hr/>					<hr/>			
1,99,38,000.00		16,54,54,534.77			2,24,17,800.00	18,57,17,912.88		

S. SENGUPTA
Accounts Officer

S. S. PANDA
Accounts Officer

P-17, Mission Row Extn.
Calcutta-700 013
28th September, 1997

SIXTYFIFTH ANNUAL REPORT: 1996-97

FOR THE YEAR ENDED 31st MARCH 1997

Previous Year				Income	Current Year		
Plan Rs.	P.	Non-Plan Rs.	P.		Plan Rs.	P.	Non-Plan P. Rs.
1,99,86,000.00		18,64,94,834.77		Brought Forward ..	2,24,17,800.00	18,67,17,910.88	

1,99,86,000.00 18,64,94,834.77

2,24,17,800.00 18,67,17,910.88

This is the Income and Expenditure account referred to our Report of even date.

G. H. MAWDAI
Chief Administrative Officer

S. B. RAO
Director

For B. C. KUNDU & Co.
Chartered Accountants

S. N. MURHOPADHYAY
Partner

INDIAN STATISTICAL INSTITUTE

SCHEDULE I

SCHEDULE OF FIXED ASSETS AS ON 31st MARCH 1997
(ACQUIRED UP TO 31st MARCH 1956 FOR WHICH DEPRECIATION PROVIDED RECEIPT OF LAND AND LAND DEVELOPMENT)

Sl. No.	Particulars	Written down value as on 1st April 1996	Deletional adjustment made during the year	Value as on 31st March 1997
(1)	(2)	(3)	(4)	(5)
A. Land and Land Development:				
1. Calcutta:				
.1	At 153 Gopal Lal Tagore Road (Adjoining 203 B. T. Road)	85,545.90		85,545.90
.2	Development of above Land	40,524.78		40,524.78
.3	At 205 B. T. Road (including cost of development)	4,22,906.70		4,22,906.70
.4	At 154, 164, 165 & 161/1 G.L.T. Road.	90,863.71		90,863.71
.5	Development of above lands	6,818.51		6,818.51
.6	At 206 B. T. Road (including cost of development)	21,36,174.84		21,36,174.84
.7	At 202 B. T. Road	5,70,104.75		5,70,104.75
.8	At 203 B. T. Road	97,556.86		97,556.86
.9	Bholytan Sarani	50,000.00		50,000.00
.10	169 G. L. T. Road	1,03,855.00		1,03,855.00
2. Qiridih:				
.1	Farm Land	24,175.67		24,175.67
.2	Development and Fencing	1,14,171.40		1,14,171.40
.3	Farming Development	10,682.00		10,682.00
.4	Irrigation and Water Supply	28,215.00		28,215.00
.5	In Village 'Makaspur', Qiridih	1,34,036.67		1,34,036.67
.6	Purchased from Smt. Prakriti Devi Gangopadhyay	14,000.00		14,000.00
.7	Rose Villa	1,07,503.72		1,07,503.72
.8	Biroja Kutir	7,445.19		7,445.19
3. Delhi:				
.1	Lease-Hold (see note (a) below)	24,72,764.12		24,72,764.12
.2	Development of above land	90,967.57		90,967.57
4. Baroda:				
.1		27,611.32		27,611.32
5. Bangalore (see note (b) below)				
.1		4,27,568.78		4,27,568.78
6. Hyderabad:				
.1		1,14,335.00		1,14,335.00
7. Madras:				
.1		71,562.50		71,562.50
8. Takda Planters Club (Lease hold, Darjeeling (see note (c) below)				
		10,591.06	481.42	10,109.64
Sub-Total:		72,55,320.52	481.42	72,54,839.10

NOTES: (a) For lease hold land at Delhi, lease deed has not yet been executed pending which no write off of the value could be made.

(b) Purchase out of ear-marked donation received from erstwhile Statistical Publishing Society.

(c) Lease-hold land, building etc. acquired in 1984-85 for 54 years. A sum of Rs. 481.42 has been written off during the year.

SIXTYFIFTH ANNUAL REPORT: 1966-67

SCHEDULE I—Contd.

S. No.	Particulars	Written down value as on 1st April 1966	Deletions/adjustments made during the year	Value as on 31st March 1967
(1)	(2)	(3)	(4)	(5)
I Buildings:				
1. Calcutta:				
J	Partly at 203 B. T. Road and partly at 163 G. L. T. Road	5,99,919.51		5,99,919.51
J	At 163 G. L. T. Road	7,19,183.45		7,19,183.45
J	At 205 B. T. Road	15,23,510.85		15,23,510.85
J	At 206 B. T. Road	54,335.87		54,335.87
J	Boys Hostel at 206 B. T. Road	20,40,752.07		20,40,752.07
J	At 202 B. T. Road	45,002.50		45,002.50
J	Purchase of flats of Palpara Housing	2,38,094.84		2,38,094.84
J	Composite Lib. Bldg. at 202 B. T. Road	66,27,120.14		66,27,120.14
J	Boundary Wall	43,228.55		43,228.55
J	Generators House at 208 B. T. Road	23,489.58		23,489.58
J	At 169 G. L. T. Road	14,160.70		14,160.70
J	At Bidyayasan Sarani, Baranagore	6,814.83		6,814.83
2. Giridih:				
J	Rose Villa	2,33,311.12		2,33,311.12
J	Health Home (see note (d) below)	9,194.29		9,194.29
J	Delhi Construction	84,68,563.82		84,68,563.82
J	Eyjabed Wall	1,187.26		1,187.26
J	Boundary Wall at Baroda	62,341.11		62,341.11
	Sub Total:	2,06,94,210.29		2,06,94,210.29
2. Sheds and Structures:				
1. Calcutta:				
J	203 B. T. Road and 163 G. L. T. Road	20,872.87		20,872.87
J	At 206 B. T. Road	46,459.25		46,459.25
J	At 156, 164, 166 & 166/1 G. L. T. Road	12,484.27		12,484.27
J	At 202 B. T. Road	1,06,420.98		1,06,420.98
J	At 4 B. N. Tagore Road (for UNTAA) Workshop situated on rental Premises	73,239.40		73,239.40
J	Car Shed at 169 G. L. T. Road	55,919.72		55,919.72
J	Staff Quarter at Bidyayasan Sarani	2,21,739.53		2,21,739.53
J	Students Hostel at 206 B. T. Road	29,668.22		29,668.22
J	Post Office at 204 B. T. Road	123.17		123.17
J	Bidyayasan Sarani, Baranagore	320.23		320.23
J	Construction of Security Guardry	24,220.00		24,220.00
J	Construction of Rest Room for Pump Operator	9,869.43		9,869.43

NOTES: (4) Situated on land received as gift, the value has been ignored for the purpose of these accounts.

INDIAN STATISTICAL INSTITUTE

SCHEDULE I—Contd.

Sl. No.	Particulars	Written down value as on 1st April 1966	Deletions/adjustment made during the year	Value as at 31st March 1966
(1)	(2)	(3)	(4)	(5)
2.	Ordnith:			
.1	Petty Construction	93,462.39		93,462.39
.2	Staff Quarters	1,77,283.98		1,77,283.98
.3	Farm's Wall	1,830.24		1,830.24
3.	Delhi:			
.1	Partitions, Structures etc.	26,645.83		26,645.83
.2	Hut for a Chowkidar	409.35		409.35
.3	Boundary Wall	16,772.88		16,772.88
.4	Road Construction	13,322.84		13,322.84
4.	Hyderabad:			
	Hut for Chowkidar	1,547.18		1,547.18
5.	Bangalore:			
	Temporary Structure Office Shed	29,208.87		29,208.87
	Sub Total:	9,73,306.43		9,73,306.43
D.	Machinery Equipment:			
.1	Calculating and other Tabulating Equipment	3,18,996.27	3,969.61	3,15,026.66
.2	Other Machinery and Equipment	9,06,610.19	1,2,290.97	8,94,319.22
.3	Workshop Machinery and Equipment	2,824.13		2,824.13
.4	Microfilm photo, reprography and optical equipment	4,98,871.29	203.83	4,98,667.46
.5	Laboratory equipment	24,10,192.34		24,10,192.34
.6	Construction equipment	8,147.74		8,147.74
.7	UNTA Workshop Machinery and Equipment	2,740.99		2,740.99
.8	Mini Computer at Delhi and Madras	92,176.24		92,176.24
.9	Electronic Computer at Baramangore	8,90,997.24		8,90,997.24
.10	Honeywell Computer (H-400)	24,216.85		24,216.85
	Sub Total:	61,53,473.28	16,464.31	61,37,008.97
E.	Passenger Lift	12,602.03		12,602.03
F.	Electrical Equipment and Installations:			
.1	High Tension Electricity	1,36,447.78		1,36,447.78
.2	Electrical Equipment & Fittings	23,57,279.90	24,595.97	23,32,683.93
.3	High Tension Electricity for UNTAA Workshop	8,728.88		8,728.88
.4	Electrical Installation for Plume Lab.	5,148.50		5,148.50
.5	Equipment for air conditioning for Composite Library Building	3,02,225.06		3,02,225.06
.6	Electrical Installation and Fittings for Comp. Lib. Bldg.	2,97,699.49		2,97,699.49
.7	Electrical Installations and Fittings for Boys Hostel at 208 H. T. Road	75,996.93		75,996.93
	Sub Total:	31,83,132.43	24,595.97	31,58,536.46

SIXTYFIFTH ANNUAL REPORT : 1986-87

SCHEDULE I—Osmold.

Sl. No.	Particulars	Written down value as on 1st April 1986	Deletions adjustment made during the year	Value as on 31st March 1987
(1)	(2)	(3)	(4)	(5)
G.	Furniture and Fixings	32,28,050.15	10,255.19	32,18,404.96
E. 1.	Books and Journals	1,68,16,319.90		1,68,16,319.90
2.	Books and Journals acquired out of Ford Foundation Grant ..	45,483.85		45,483.85
I.	Motor Car and Vehicles	8,49,010.48	36,924.05	8,12,086.41
J.	Library equipment (including equipment procured through from Foundation Grant and Rockefeller Foundation Grant) ..	16,487.83		16,487.83
K.	Water Supply arrangement	4,37,890.40		4,37,890.40
L.	Overbridge: Calcutta	2,144.48		2,144.48
M.	Soviet Printing Machine (see note (e) below)	1,38,804.25		1,38,804.25
N.	S.R.C Equipment	14,549.18		14,549.18
O.	F.A.I Project equipment (Furniture acquired through F.A.I Grant) ..	480.34		480.34
P.	Investigation of Statistical Problem connected with sediment transportation Project: Laboratory equipment acquired out of grant from National Science Academy	5,806.05		5,806.05
Q.	PABX Installation: Delhi	12,823.98		12,823.98
	PABX Installation: Calcutta	1,34,559.09		1,34,559.09
	Internal Telephone: Calcutta	577.04		577.04
R.	Survey Research Methodology Project:			
	Calculating equipment acquired out of Grant from ICSSR ..	314.38		314.38
GRAND TOTAL:		5,89,76,865.30	88,420.34	5,83,87,234.36

NOTES: (e) Represents value of Soviet printing machine received as a gift from the Soviet Academy of Sciences, USSR, which has been made over to the erstwhile Statistical Publishing Society for Utilisation as per agreement.

S. BHATTACHA
Accounts Officer

S. S. PANJA
Accounts Officer

G. H. MAHARAJ
Chief Administrative Officer

S. B. RAO
Director

For B. C. KUNDU & Co
Chartered Accountants

B. N. MUKERJAPARTY
Partner

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Calcutta-700 013
28th September, 1987

INDIAN STATISTICAL INSTITUTE

SCHEDULE IA

SCHEDULE OF FIXED ASSETS AS ON 31st MARCH 1997

(Acquired from 1st April 1986 onwards on which no Depreciation)

Sl. No.	Particulars	Original Cost as on 1st April 1986	Addition during the year	Deletions/adjustment during the year	Original Cost as on 31st March 1997
(1)	(2)	(3)	(4)	(5)	(6)
I. Assets acquired out of Capital Expenditure Grant					
A. Land and Land Development :					
1. Calcutta :					
.1	Adhoc Payment for acquisition of Land at Gupta Nivas	30,00,000.00	—	—	30,00,000.00
.2	Campus Development work	6,67,039.52	4,93,924.36	—	11,60,963.88
2. Giridih :					
.1	Farm Land	3,69,328.67	—	—	3,69,328.67
.2	Rose Villa	1,02,261.87	8,81,546.67	—	3,85,808.74
.3	Health Home	10,000.00	—	—	10,000.00
3. Bangalore :					
		10,15,928.28	—	—	10,15,928.28
4. Delhi :					
		4,76,746.13	4,790.00	—	4,80,536.13
5. Hyderabad-Boundary Wall					
		83,812.92	—	—	83,812.92
	Sub-Total :	5,713,817.27	7,60,261.23	—	64,74,078.60
B. Buildings :					
(Item 2, 7, 8, 9 & 10 are works in Progress)					
1. Calcutta :					
.1	Boys Hostel at 206 B. T. Road	3,27,889.70	—	—	3,27,889.70
.2	Composite Lib. Bldgs. at 202 B. T. Road	1,12,85,883.97	—	—	1,12,85,883.97
.3	Staff Quarter at Deluxe Garden, 169 G.L.T. Road (1st to 4th Block)	35,56,787.67	—	—	35,56,787.67
.4	Faculty Bldg. at 205 B.T. Rd.	23,17,818.43	—	—	23,17,818.43
.5	Administrative Bldgs. at 202 B. T. Road.	46,26,806.74	1,44,700.10	—	48,70,696.84
.6	Medical Welfare Bldgs. at 206 B. T. Road	8,46,700.60	—	—	8,46,700.60
.7	Hostel Bldg. (2nd) Sr. Students Hostel	66,97,530.98	—	—	66,97,530.98
.8	RTS Bldg. (Renovation)	87,85,241.01	—	—	87,36,341.01
.9	ISEO Bldg. (Old Renovation)	96,036.43	—	—	96,036.43
.10	Staff Quarter at Deluxe Garden (2nd Phase) (5th Block)	20,26,129.03	1,47,422.89	—	21,73,552.08
.11	New Guest House at 205 B. T. Road	68,03,223.69	24,68,524.53	—	87,58,748.41
.12	Amrapali Bldg.	6,22,671.04	—	—	6,22,671.04
.13	Renovation and Face Lifting of different Premises	21,46,222.98	6,08,664.10	—	27,14,787.06
.14	PC Terminal Room at various Buildings	1,80,363.00	—	—	1,80,363.00

SIXTYFIFTH ANNUAL REPORT : 1996-97

SCHEDULE IA—Contd.

SCHEDULE OF FIXED ASSETS AS ON 31st MARCH 1997

(Acquired from 1st April 1986 onwards on which no Depreciation)

R. No.	Particulars	Original Cost as on 1st April 1996	Addition during the year	Deletions/adjustment during the year	Original Cost as on 31st March 1997
(1)	(2)	(3)	(4)	(5)	(6)
I. Girdih :					
.1	Rose Villa	1,96,772.79	71,065.53		2,67,838.32
.2	Health Home	8,634.13	—		8,634.13
.3	Boundary Wall	51,679.73	—		51,679.73
1.1 Delhi :		40,47,664.65	1,174,130.00		5,221,794.65
.2	Delhi (Renovation & Face Lifting)	5,56,671.18	7,80,000.00		13,36,671.18
4. Hyderabad :		45,78,042.43	—		45,78,042.43
5.1 Bangalore :		18,878,982.42	7,04,212.58		19,578,174.96
.2	Bangalore (Face Lifting of Building)	6,48,207.11	1,04,923.00		7,53,130.11
	Sub-Total	7,38,24,619.26	61,51,642.17		7,07,76,101.43
C. Sheds and Structure :					
1. Girdih :					
.1	Potty Construction	91,834.24	—		91,834.24
2. Bangalore :					
.1	Temporary Structure Office Shed	34,645.71	—		34,645.71
3. Hyderabad :		27,676.07	—		27,676.07
4. Delhi :		4,71,278.88			4,71,278.88
5. Calcutta :		29,844.90	64,091.10		93,036.09
	Sub-Total :	6,55,178.30	64,091.19		7,19,269.49
D. .1 Office Machinery and Equipment :					
	Calculating Punching and other Tabulating equipment	2,30,182.80	24,385.00		2,54,517.80
.2	Other Machinery and Equipment	35,58,470.90	4,57,860.40		39,94,331.30
.3	Microfilm Reprography and Optical	87,69,265.38	9,30,152.20		46,99,407.58
.4	Laboratory Equipment	1,97,44,377.35	27,73,369.00		2,25,17,699.35
.5	Mini Computer at Delhi and Madras	70,08,328.92	8,29,904.00		78,38,232.92
.6	Electronis Computer at Baranagore	2,89,82,812.19	43,33,792.00		3,33,16,604.19
.7	Mini Computer at Bangalore	39,07,438.90	4,52,000.00		43,59,438.90
	Sub-Total :	6,71,76,718.24	98,01,455.60		7,69,78,171.84
E. Audio Visual Documentary Film on Prof. PCM		6,66,000.00	—		6,66,000.00
F. Boats and Station etc.		2,00,000.00	—		2,00,000.00
G. Passenger Lift		7,65,472.66	3,88,481.00		11,51,953.66