



GOVERNMENT OF KERALA

**ADMINISTRATION REPORT
OF THE
Technical Education
Department**

FOR THE YEAR 1987-88

**PRINTED BY THE S. G. P. AT THE GOVERNMENT PRESS,
ERNAKULAM—1989**

ADMINISTRATION REPORT
OF THE
TECHNICAL EDUCATION DEPARTMENT

FOR THE YEAR 1987-88



The Government of Kerala
1989



HIGHER EDUCATION (G) DEPARTMENT

G.O. (P) 220/88/H.Edn., dated, Trivandrum,
17th October 1988

Abstract.—Education—Technical—Administration Report of
Technical Education Department for the year 1987-88
—Reviewed.

Read.—Letter No. LA-39294/87, dated 14th June 1988 from the
Director of Technical Education, Trivandrum.

ORDER

1. Recorded.

2. Dr. T. S. Ramanatha Iyer continued as Director of Technical Education upto 31st October 1987. Dr. R. Jayaraman was appointed as Director of Technical Education on 1st November 1987 on the retirement of Dr. T.S. Ramanatha Iyer. Sri G. Panduranga Das was the Administrative Officer till 9th October 1987. Sri Francis Xavier was then appointed as Administrative Officer. On his transfer on 4th February 1988, Sri S. Narayana Pillai was appointed as Administrative Officer from 5th February 1988.

3. The Office of the Director of Technical Education was functioning in the ground floor of the Electricity Board building in the Power House Road.

4. The following institutions function under the direct control of the Department.

Sl. No.	Category	Management			Total
		Government	Private	Quasi Government	
(1)	(2)	(3)	(4)	(5)	(6)
1.	Engineering Colleges	3	3	1	7
2.	Polytechnics	14	6	..	20
3.	Womens' Polytechnics	4	..	..	4
4.	Institute of Printing Technology	1	..	..	1
5.	Food Craft Institute and Extension Centre	..	..	7	7

Sl. No.	Category	Management			Total
		Government	Private	Quasi Government	
(1)	(2)	(3)	(4)	(5)	(6)
6.	College of Fine Arts	1	..	..	1
7.	Institute of Fine Arts	2	..	..	2
8.	Commercial Institutions	17	..	..	17
9.	Technical High Schools	47	..	..	47
10.	Pre-vocational Training Centre	19	..	..	19
11.	Government Industrial Schools	2	..	..	2
12.	Vocational Training Centre	5	..	..	5
13.	Tailoring Training Centres	7	..	..	7
14.	T.G.M.T. Centres	31	..	..	31
15.	Tailoring Trade Schools	2	..	..	2
16.	T.T.T. Extension Centres	..	..	1	1
17.	Supervisory Development Centre	1	..	..	1
18.	Others	..	..	3	3
19.	Autonomous Institutions	..	..	..	..
Total		156	9	12	177

5. The State Board of Technical Education and Board of Studies in Engineering and Technology were functioning during the year under review.

6. The total provision under the State Plan for the Department during the year 1987-88 was Rs. 365 lakhs. The total expenditure (tentative) under the State Plan till the end of March 1987 was Rs. 309.37 lakhs.

7. Under the Centrally Sponsored Schemes, the expenditure was Rs. 120.87 lakhs against the provision of Rs. 135 lakhs.

8. The following were some of the major achievements during the period under review:

Achievements.—(1) During the previous years of the Plan Period, a number of new Institutions and courses were started. Therefore, emphasis was given to the consolidation and development of these institutions and courses during the year.

(2) A new Computer System was inaugurated in the polytechnic Palai during the year.

(3) A Post-graduate Diploma in Computer Application (3 Semester duration) for Science Graduates was started in April 1987 with an intake of 35 students.

(4) Under Quality Improvement Programme, faculty members were deputed for higher studies, 30 persons at Post-graduate level and 3 persons at Doctoral level.

(5) During 1987-88, new training places were located for Wood Technology Diploma holders, Polymer Technology Diploma etc. in various Industries in the State.

(6) *Industry Oriented Training Programme.*—A Part-time Post-diploma Course on Industrial Safety Engineering is conducted by the Directorate at the Supervisory Development Centre, Kalamassery.

(7) *Special Self Employment Oriented Training Programmes.*—A Post S.S.L.C. Certificate Course on Cosmetology and Beauty Parlour Management for unemployed women were conducted at Kottayam and Kalamassery.

(8) *Training in Foreman Training Institute, Bangalore.*—The Department is sponsoring 25 First Class Mechanical Engineering Diploma holders to the Foreman Training Institute, Bangalore, every year.

(9) *Kerala State Science and Technology Museum.*—During the year, many new items of exhibits have been added to the galleries and the garden. The Museum has now procured 80 exhibits covering all aspects of Automobiles, Steam Engines, Boilers and other branches of Power Engineering for the gallery on "Power and Motion". Many new exhibits have been added to the Gallery on Architecture and the Gallery on Electricity and Electronics also.

(10) *L.B.S. Centre for Science and Technology.*—During the year 1987-88, L.B.S. Centre for Science and Technology conducted workshops on the recent developments of Concrete Technology and Power System Studies on P.C. Environment, a Computer Programming Language Course at Trivandrum, Orientation Workshop on Slack Monitoring at Kalamassery. The Centre has executed a major inter-disciplinary Project work for the strengthening and widening of N.H.-17. Air Pollution Monitoring is carried out by the Centre through analysis of slack emission in various factories in the State.

(11) *Polytechnic Teacher Award of I. S. T. E.*—Sri P. K. Sasidharan, Head of Civil Engineering, Sree Rama Polytechnic, Valappad and Sri P. Saktidharan, Lecturer in Mechanical Engineering, Carmel Polytechnic, Alleppey were awarded 'Best Polytechnic Teacher' Award 1987-88 by the Indian Society for Technical Education.

(12) *I.H.R.D. for Electronics*.—The Institute of Human Resources Development for Electronics has been established by the Government for taking up various activities in connection with the generation of highly skilled manpower required in the Electronics Sector and this institute functioned well during the year.

(13) *Examination results*.—The Department was able to conduct the various examinations and publish the results as scheduled. The percentage of pass has also improved during the year. In the Technical High School Leaving Certificate Examination held in March, 1987, a student from the Technical High School, Shertallai secured First Rank and 4 T.H.S. viz. Neruvambram, Payyoli, Manantoddy, and Kuttipuram secured 100 per cent pass.

(14) *Central Technical Library*.—A Central Technical Library with all facilities is functioning in the College of Engineering, Trivandrum.

(15) *Student Amenities*.—Various programmes have been implemented for the betterment of student amenities.

(16) *Apprenticeship Training*.—The Regional Apprenticeship Adviser (Southern Region), Madras is making best efforts to refix the number of training places in various Government Departments and Private Establishments in the State.

(17) *Quality Improvement Programme for students*.—Supervisory Development Programmes for the benefit of the final year students of Engineering Degree and Diploma were conducted under the joint auspices of the Directorate and the Regional Apprenticeship Adviser (S.R.) in almost all Engineering Colleges and Polytechnics.

(18) *Community Polytechnic Scheme*.—The selected Polytechnics have conducted a variety of Community Development Programmes such as conducting seminars and workshops on 'Technician Education and Rural Development', 'Rural Housing and Low Cost Building Materials', 'Renewable Sources of Energy', Socio-Economic Survey of Villages, a Scientific Technological and Educational exhibition and demonstrated several smokeless chullas, solar cookers and biogas plants.

(19) *Scheduled Castes/Scheduled Tribes and Weaker Sections of the Society*.—An amount of Rs. 4.66 lakhs and Rs. 0.23 lakhs were spent under Special Component Plan and Tribal Sub-Plan, respectively for giving benefits to Scheduled Castes/Scheduled Tribes students. The Scheme of free supply of books worth Rs. 25 and 2 sets of uniform cloth to Scheduled Castes/Scheduled Tribes students of Technical High School, Rs. 150 and 2 sets of uniform cloth to Scheduled Castes/Scheduled Tribes students in Polytechnics, Rs. 150 and one pocket calculator for Scheduled Castes/Scheduled Tribes students of Engineering Colleges, one Typewriter/One Sewing Machine to the final year

Scheduled Castes/Scheduled Tribes students of Commercial Practices and Costume Design and Dress Making course respectively in the Womens' Polytechnics etc. was implemented. Special coaching to the needy Scheduled Castes/Scheduled Tribes students of Engineering Colleges and Polytechnics were arranged. 10 T.G.M.T. Training Centres to the Scheduled Castes/Scheduled Tribes were functioning during the year also. The 18 months training programme in stuffed toy making was conducted in 3 Womens' Polytechnics. 60 students were selected for this training who were given monthly stipend of Rs. 250.

9. The total outlay for the Department (both Plan and Non-Plan) during 1987-88 was Rs. 1531.53 lakhs. During the year under report the total expenditure (tentative) came to Rs. 1524.90 lakhs. In addition to this, there was a provision of Rs. 135 lakhs under Centrally Sponsored Scheme and the expenditure (tentative) came to Rs. 120.87 lakhs. The amounts provided under the Plan are for the various Schemes of developmental activities of Technical Education Department. The amount under Non-Plan was mainly for the salaries and other expenses for staff and related activities.

10. The working of the Department during the year under review was on the whole satisfactory.

(By order of the Governor)
M.S.K. RAMASWAMI,
Commissioner and Secretary.

**ADMINISTRATION REPORT OF THE
DEPARTMENT OF TECHNICAL EDUCATION
FOR THE YEAR 1987-88**

Minister for Education	.. Sri K. Chandrasekharan
Commissioner and Secretary to Government	.. Sri M. S. K. Ramaswamy
Director of Technical Education	.. Dr. T. S. Ramanatha Iyer (upto 31-10-1987) Dr. R. Jayaraman (From 1-11-1987)

SYNOPSIS

The department of Technical Education comes under the Ministry of Education of the Government of Kerala. The department is headed by the Director of Technical Education and functions under the instructions from the Ministry.

The Co-ordination of the State Level Technical Education is vested with the State Board of Technical Education and academic matters are dealt with by the Board of Studies in Engineering and Technology.

The Department of Technical Education has control over 7 Engineering Colleges, 24 Polytechnics, one Institute of Printing Technology, 47 Technical High Schools, 3 Fine Arts Institutions, 17 Government Commercial institutions, 42 Government Industrial Schools T.G.M.T. Centres, 5 Vocational Training Centres and 1 Pre-Vocational Training centres attached to Technical High School. the Food Craft Institute, Kalamassery and the Extension Centres at Trivandrum, Calicut, Kottayam, Kothamangalam and Trichur are autonomous institutions attached to this department. Apart from these institutions there are three autonomous institutions linked to this Department, namely Lal Bahadur Shastri Engineering Research and

Consultancy Centre, the Kerala State Science and Technology Museum and the Institute for Human Resource Development in Electronics. The Regional Engineering College, Calicut is an autonomous technical institution with the Minister for Education as Chairman. An Audio-visual and Reprographic Centre is also functioning under the Directorate.

There are also 366 Industrial Schools and 99 Engineering Institutions under the private sector which are recognised by the Department.

The Directorate commands a manpower strength of more than 6500 by way of teaching staff, technical supporting staff, administrative staff and allied staff. The total intake of students exclusive of Technical High School is 6417. About 29,000 students are otherwise benefitted at certificate level including 2850 students admitted to Technical High Schools. All Engineering Colleges and almost all Polytechnics except the newly started ones and Technical High Schools, Cheruvathur are provided with hostel facilities and sufficient library facilities.

The original provision under the State Plan for 1987-88 was Rs. 504 lakhs inclusive of the share operated by the P. W.D (66 lakhs). the Science and Technology Museum and Institute for Human Resources Development in Electronics. The provision under Non-Plan was Rs. 1166.53 lakhs.

The approximate expenditure during the period 1987-88 was Rs. 309.37 lakhs which is 85 per cent of original plan provision. Under 100 per cent Centrally Sponsored schemes there is a provision of 135 lakhs and the tentative expenditure comes to Rs. 120.97 lakhs. The percentage of expenditure against the provision comes to 90 per cent. The tentative Non-Plan expenditure comes to Rs. 1215.53 lakhs during the year 1987-88.

The year under report had been comparatively rich in activities. 2524 candidates were admitted to the Degree Course in the various Engineering Colleges and 3677 students were admitted to the Diploma Courses in the various Polytechnics. Moreover the training of 40,000 students studying for the K.G.C. Examination and about 16500 students of K.G.T.E. Courses studying in provisionally recognised institutions have been undertaken by the Department.

The institutions provide instructions in Diploma, Post-diploma, Graduate and Post-graduate levels on a regular and part-time basis. Part time courses are restricted to a few institutions. No new institution was started during the year. 3 Year Diploma Course in Electronics was started in the Government Polytechnics at Kottayam, Perinthalmanna and Cannanore and in the Institute of Printing Technology, Shoranur. A 3 Year Diploma Course in Computer

Engineering was started in the Women's Polytechnic, Trichur. There was substantial growth in the quality of Education and maintenance of discipline in the institutions.

Under the special component Plan, Free supply of text books and Teaching aids were continued. Facilities were given for special coaching schemes for Scheduled Caste/Scheduled Tribe students in all Engineering Colleges and Polytechnics. By and large there was an all-round improvement of discipline, efficiency and activities in all Institutions under the Department during the year 1987-88.

1. ORGANISATIONAL STRUCTURE

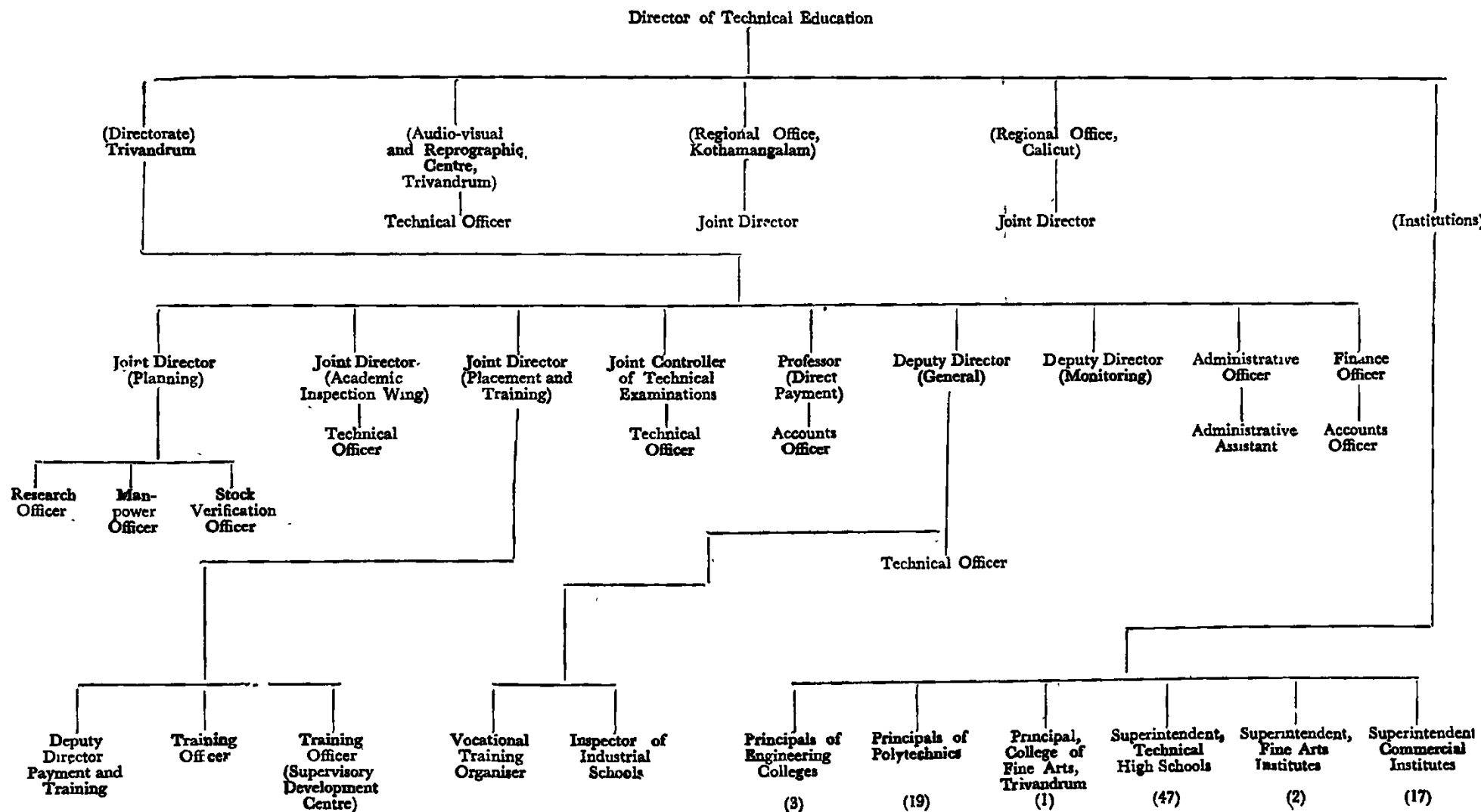
The history of organisation of the Department of Technical Education in Kerala goes back to 1957. Till then the only Engineering College was controlled by Kerala University and the other Technical Institutions by the Department of Industries and Commerce.

At present the Department comes under the Ministry of Education, Government of Kerala. The Department has at the top of the hierarchy the Hon'ble Minister for Education, the communication and decision making channels pass through the Secretary for Higher Education to the Director of Technical Education.

The organisational structure of the Department is shown in figure. The Directory of personnel and the Appendices that follow indicate the role of the controlling authorities attached to this Department.

Technical Education in the State is at present co-ordinated by the State Board of Technical Education. Academic matters relating to the Engineering Degree Courses come under the purview of the Board of Studies in Engineering of Kerala and Calicut Universities, while academic matters relating to the other technical courses come under purview of the Board of Studies in Engineering and Technology attached to the Department.

FIG. 1
Organisation of the Department of Technical Education



2. GENERAL REVIEW

2. The Department in 1987-88

2.1 Introduction.—The Department of Technical Education Government of Kerala was started in 1957. There were only one Engineering College and three Polytechnics to begin with. Today the Department has grown into a major organisation in the field of Professional Education and Training. Seven Engineering Colleges, 25 Polytechnics, 47 Technical High Schools and 94 other Technical Institutions at various levels meet the demands of the students in Kerala.

State Board of Technical Education with the Minister of Education as the Chairman and the Director of Technical Education as the Convenor advise the Government and the Department in matters connected with Technical Education. Advice on academic matters is sought from the Board of Studies in Engineering and Technology. The lists of members of these bodies are appended in Appendix 1.

2.2 Objectives/Functions.—(1) Impart Technical Education through the various institutions.

(2) Selection of students for different courses and allotment to different Institutions.

(3) Formulation, implementation and monitoring of Plan Schemes.

(4) The disbursement of grants to private Engineering Colleges and Polytechnics.

(5) Distribution of scholarships to the deserving and eligible students.

(6) Conduct of inspection to assess the eligibility for recognition of Private Engineering, Industrial and Tailoring Institutions and granting the recognition.

(7) Conduct of Diploma examination in all Engineering disciplines.

(8) Planning and implementing schemes to create a Science and Technology consciousness amongst people.

(9) Arranging Apprenticeship training to the Graduate and Diploma holders in Engineering.

2.3 Resources.—(1) *Personnel.*—Appendix 2 gives the Directory of personnel during the year. A list of Heads of Institution is given in Appendix 3.

2.3.1 Staff position.—There are more than 6,500 people working under the Directorate belonging to various Categories in the various

institutions. The details of personnel in the Directorate, Head of Institutions and staff position during 1987-88 are given as 2, 3 and 4.

Institutions.—Altogether there are 177 institutions under the Directorate of Technical Education. Of these 156 are Government institutions, 9 are private institutions and 8 quasi Government institutions. The Kerala State Science and Technology Museum, Lal Bahadur Shastri Engineering Research and Consultancy Centre and Institute of Human Research and Development in Electronics are also autonomous institutions associated with this Department. The Technical Teachers Training Institute Extension Centre is also functioning at Kalamassery for the benefit of the Institutions under this Department.

Engineering Colleges.—Selection to all the seats in Government Engineering Colleges and 85 per cent seats in the three private Engineering Colleges in the State was made through the Entrance Examination and the allotment of candidates to the Institutes was done by the Directorate. The principles of reservation laid down by the Government for the socially and educationally backward classes and Scheduled Castes/Scheduled Tribes were followed. Reservations were also made for Sports Council nominees. Nominees from other States and other categories like physically handicapped persons, dependents of serving defence Personnel, Ex-servicemens etc. Actual intake during the year 1987-88 is given in Appendix 6 and the district-wise distribution of these institutions is given in Appendix 7.

College of Fine Arts.—Selection of candidates for admission to the first year integrated preparatory courses was made from among those who had passed Pre-degree or equivalent examination on the basis of aptitude tests and interview which were conducted by a committee appointed by the Government. The ratio of marks for aptitude test and interview was 4:1. Minimum marks for pass in the aptitude test was 40 per cent. Scheduled Castes/Scheduled Tribes were allowed a concession of 5 per cent in the aptitude test for eligibility for interview.

Polytechnics and Women's Polytechnics.—The selection of candidates for admission to all the Polytechnics in the Public sector, Institute for Printing Technology and 85 per cent seats in the six Private Polytechnics was made by a committee, consisting of the Principals Polytechnics and Women's Polytechnics and Institute of Printing Technology, Shoranur and Director of Technical Education with the assistance of the staff of the Directorate deputed for the purpose.

The selection of candidates for admission was made strictly on the basis of marks obtained for mathematics and General Science in the S.S.L.C./J.T.S.L.C. Examination subject to the reservation of seats fixed by the Government for Socially and Educationally Backward Classes/Scheduled Tribes and such other categories.

Technical High Schools.—Admission to all the Technical High Schools was made on the basis of marks obtained on the common test conducted by the Director of Technical Education in the respective institutions, subject to the principles of reservation of seats to Scheduled Castes/Scheduled Tribes laid down by the Government. The selection in each Institutions was made by a Committee consisting of the Superintendent of the concerned Technical High School, a graduate Teacher of the same school, an Industrialist of the area and the Principal of the nearest Polytechnics.

Private Grant-in-aid Schools.—There are 85 grant-in-aid schools during the year under report. Students were given coaching for K.G.T. Examination in various trades like Tailoring, Embroidery, Printing, Weaving, Drawing etc.

Admission to these Institutions was made from the candidates within the age group of 14-23 who had passed VII Standard or equivalent. Some of these institutions were paid teaching grant at the rate of Rs. 125 per teacher, subject to their satisfying the condition laid down in the grant-in-aid code.

The list of Technical Institutions in Kerala, District-wise distribution of Technical Institutions, number of Institutions under the department of Technical Education are given as Appendix 8.

GENERAL

Progress in the use of Malayalam as Official Language:—

Steps were taken to use Malayalam for correspondence with Class IV Staff and convert the various terms used in the Department into Malayalam. The replies to letters received in Malayalam are given in Malayalam. Notes are put up in Malayalam. In the College of Engineering, Trivandrum the Department of Electrical Engineering have taken initiative to introduce Malayalam Characters for word processing.

3. FINANCIAL REVIEW

3.1 The total outlay (both Plan and Non-Plan) during 1987-88 was Rs. 1531.53 lakhs. During the year under report the total expenditure (tentative) come to Rs 1524.90 lakhs. In addition to this there was a provision of Rs. 135 lakhs under Centrally Sponsored Scheme, and the expenditure (tentative) come to Rs. 120.87 lakhs. The provision and expenditure pertaining to 1987-88 in comparison with 1986-87 are given in the table given.

The amounts provided under the Plan are for the various schemes of developmental activities of Technical Education. The amount under Non-Plan was mainly for the salaries and other expenses for staff and related activities.

**Statement-wise Statement of Non-Plan provision and Expenditure during the years
1986-87 and 1987-88**

<i>S. No.</i>	<i>Head of account and Name of scheme</i>	<i>Provision for 1987-88 (Rs. in lakhs)</i>	<i>Expenditure 1987-88 Tentative (Rs. in lakhs)</i>	<i>Provision for 1986-87 (final year) (Rs. in lakhs)</i>	<i>Expenditure for 1986-87 (Rs. in lakhs)</i>
(1)	(2)	(3)	(4)	(5)	(6)
1.	2203-00-001-01 Direction and Administration	.. 43.32	43.89	34.17	44.60
2.	2203-00-001-02 Statistics and Placement	.. 2.81	1.73	1.69	1.92
3.	2203-00-001-108 Examination	.. 15.69	19.98	12.45	16.36
4.	2203-00-103-01 Technical High School	.. 200.10	214.52	150.99	180.22
5.	2203-00-103-02 Industrial Education	..		12.75	11.68
6.	2203-00-103-03- Pre-vocational Training Centre	.. 27.92	31.89	17.57	26.26
7.	2203-00-105-01 Government Polytechnics	.. 297.90	277.96	208.14	234.95
8.	2203-00-105-02 Women's Polytechnics	.. 22.88	21.88	20.94	22.01
9.	2203-00-105-03 C.D.C.	.. 11.59	16.85	9.97	14.56
10.	2203-00-112-01 Government Engineering Colleges	.. 173.70	173.34	148.85	183.20
11.	2203-00-104-01 Private Engineering Grant-in-aid	.. 155.63	148.00	159.75	152.07
12.	2203-00-104-02 Regional Engineering College	.. 79.02	75.07	70.73	70.73

13.	2203-00-108-03 Private Polytechnic Grant-in-aid	..	100.35	99.00	87.28	91.66
14.	2203-00-001-04 Food Craft Institute	..	11.55	10.97	10.17	20.17
15.	2203-00-001-05 Industrial Schools Grant-in-aid	..	3.30	2.35	3.50	2.86
16.	2203-00-107 Scholarships	..	0.50	0.22	0.50	0.11
17.	2203-00-003-008 T.G.M.T.	..	4.55	5.21	4.02	2.43
18.	2203-00-003-09 T.G.M.T. Special Component	..	2.86	3.13	2.00	2.54
19.	2203-00-800-8 Diversification course	.	26.97	35.93	18.73	25.88
20.	2203-00-800-13 Matching Grant	..	2.17	3.45	1.50	3.20
21.	2203-00-001-02 School of Arts	..	9.03	8.10	9.40	7.49
22.	2205-00-101-07 College of Fine Arts	..	9.48	8.79	7.10	8.64
Total			<u>1,166.53</u>	<u>1,215.53</u>	<u>992.18</u>	<u>963.14</u>

**Scheme-wise statement of Plan provision and Expenditure during the
years 1986-87 and 1987-88**

<i>Sl. No.</i>	<i>Head of Account and Name of Scheme</i>	<i>Provision for 1987-88 (Rs. in lakhs)</i>	<i>Expenditure for 1987-88 tentative (Rs. in lakhs)</i>	<i>Provision for 1986-87 final grant (Rs. in lakhs)</i>	<i>Expenditure for 1986-87 (Rs. in lakhs)</i>
(1)	(2)	(3)	(4)	(5)	(6)
1.	Construction of buliding in the Directorate—				
	4202-02-800-07	5.00	..	2.00	..
2.	Technical High Schools—				
	277F (b) 1/2203-00-103-01	25.00	35.77	2.50	3.40
	277F (b) 3/2203-00-103-03	5.00	0.16	1.00	0.72
	277F (b) 4	..	..	18.50	32.98
	277F (b) 5	..	..	..	..
	477 (d) 1/4202-03-104-02	30.00	7.77	40.00	15.11
3.	Government Polytechnics—				
	277F (c) 1/2203-00-105-01	30.00	8.83	3.00	3.36
	277F (c) 2/2203-00-105-02	5.00	1.24	1.50	1.56
	277F (c) 4/2203-00-105-04	3.00	0.01	25.50	22.19
	477 (d) 1/4202-02-104-01	20.00	13.81	22.00	23.32
4.	Assistance to Private Polytechnics—				
	277F (c) 3/2203-00-104-03	6.00	4.61	6.00	4.52
5.	Government Engineering Colleges—				
	277F (d) 2/4203-00-112-02	10.00	5.09	3.50	6.07
	277F (d) 4/2203-00-112-04	10.00	6.11	3.00	6.43
	277F (d) 6/2203-00-112-06	3.00	4.81	4.00	11.91

	277F (d) 7	..	..	..	0.50	..
	277F (d) 1/2203-00-112-08	..	2.00	4.15	4.00	8.93
	477 (d) 8/4202-00-105-01	..	5.00	34.12	5.00	21.42
6.	Assistance to Regional Engineering College—					
	277F (e) 2/2203-00-104-02	..	4.00	4.00	4.00	4.00
7.	Starting of new Engineering College—					
	277F (d) 1/2203-00-112-01	..	40.00	36.94	40.00	33.06
8.	Assistance to Private Engineering College—					
	277F (c) 1/2203-00-104-01	..	4.00	5.48	6.00	2.15
9.	Food Craft Institute, Kalamassery, and Extension Centres—					
	277F (e) 4/2203-00-104-04	..	10.00	8.40	7.00	9.98
10.	Extension Centre of T.T.T.I.—					
	277F (h) 6/2203-00-003-06	..	5.00	1.08	1.00	1.09
	477 (d) 1	..	..	..	1.00	..
11.	Science and Technology Museum—					
	277F (i) 5/2203-00-800-05	..	70.00	70.00	31.00	31.00
12.	College of Fine Arts and Fine Arts Institution—					
	278 (a) 7/2203-00-101-07	..	4.00	0.43	7.00	5.36
	477 (d) 1/4202-04-101-01,	..	1.00	..	1.00	..
13.	Centres of Diploma in Commercial Practice—					
	277 (c) 3/2203-00-105-03	..	3.00	5.33	2.00	4.54
	477 (d) 1	..	..	..	1.00	..

<i>Sl. No.</i>	<i>Head of Account and Name of Scheme</i>	<i>Provision for 1987-88 (Rs. in lakhs)</i>	<i>Expenditure for 1987-88 tentative (Rs. in lakhs)</i>	<i>Provision for 1986-87 final grant (Rs. in lakhs)</i>	<i>Expenditure for 1986-87 (Rs. in lakhs)</i>
(1)	(2)	(3)	(4)	(5)	(6)
14.	Tailoring and Garment Making Centres—				
	277F (h) 9/2203-00-03-08	.. 1.00	0.23	1.00	0.45
15.	Apprenticeship Training—				
	277F (h) 5/2203-00-03-05	.. 7.00	7.09	3.00	5.21
	477 (d) 1		..	2.00	..
16.	Matching grant for Central Schemes (States shares)—				
	277F (i) 25/2203-00-800-24	.. 4.00	0.50	4.00	2.87
17.	Construction of Staff Quarters—				
	477 (d) 1/4202-02-800-04	.. 5.00	..	3.00	..
18.	Faculty Development—				
	277F (h) 1/2203-00-003-01	.. 10.00	23.47	8.00	9.98
	277F (h) 2/2203-00-003-02	.. 5.00	..	..	..
19.	Special Component Plan				
	277F (h) 10/2203-00-03-09	.. 1.50	0.15	1.00	0.79
	277F (i) 10/2203-00-800-10	.. 4.00	2.00	3.00	3.14
	277F (i) 15/2203-00-800-15	.. 2.00	2.51	2.00	1.43
20.	Tribal Sub Plan—				
	277F (i) 11/2203-00-800-11	.. 0.50	0.23	0.10	0.05

21. Development of Human Resources
Electronics—

277F (i) 27/2203-00-800-26	..	25 00	15.00	20.00	0.1
277 (i) 13	..	..	..	..	..
Total	..	365.00	309.37	290.10	277 03

CENTRALLY SPONSORED SCHEME 100 PER CENT ASSISTANCE

1. Post Graduate Courses in
Engineering College,
Trivandrum—

277F (d) 3/2203-00-112-03	..	60.00	61.55	45.00	44.72
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2. Post Graduate Courses in
Engineering College,
Trichur—

..	25.00	24.06	20.00	25.58
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3. Direct Central Assistance for
Development of Government
Engineering Colleges and
Polytechnics—

277F (d) 15/2203-00-105-06	..	20 00	10.61	}	30.00	35.16
2203-00-112-14	..	30 00	24.75			
Total	..	135.00	120.87		95.00	105 46

3.2 *Direct Financial Assistance from Government of India.*—Government of India has been giving direct financial assistance to same Institutions in Kerala, under the Directorate of Technical Education for different projects. They are briefly mentioned below:

Direct Central assistance received during 1987-88

<i>Sl. No.</i>	<i>Name of Institution</i>	<i>Amount received Rs.</i>	<i>Purpose</i>
(1)	(2)	(3)	(4)
1.	Thiagarajar Polytechnic, Alagappanagar	50,000	Community Polytechnic Scheme
2.	Maharaja's Technological Institute, Trichur	10,00,000	Library books, Reprographic facilities and audiovisual equipments
3.	Kerala Government Polytechnic, Calicut	7,00,000	Quality Improvement
4.	S.R. Polytechnic, Valapad	1,25,000	Community Polytechnic
5.	M.A. College of Engineering, Kothamangalam	15,00,000	Development of Laboratory, Industrial Residency Research Centre, etc.
6.	S.S.M. Polytechnic, Tirur	3,00,000	Development of Computer Centre
7.	N.S.S. Engineering College, Palghat	15,00,000	Bio-Chemical Laboratory, Instrumentation Lab.
8.	Engineering College, Trivandrum	10,00,000	Workshop etc. Development
9.	Engineering College, Trichur	15,00,000	Master Computer application, power electrification workshop, development etc.
10.	T.K.M. College of Engineering, Quilon	15,00,000	

4. ACADEMIC ACTIVITIES

4.1 Engineering College

(i) *Government*.—There are three Government Engineering Colleges one each at Trivandrum, Trichur and Cannanore. The College at Cannanore was started during 1986–87. These institutions offered courses at undergraduate level in basic Engineering disciplines like Civil Engineering, Mechanical Engineering, Electrical and Electronics Engineering at Trivandrum. Additionally Architecture, Industrial Engineering, Electronics and Communication, Applied Electronics and Instrumentation and Computer Science and Engineering were offered at Degree level. At Trichur, Chemical Engineering, Production-cum-Plant Engineering, Electronics and Communication and Computer Science and Engineering were offered at Degree level. The total intake at Trivandrum stood at 500, Trichur at 410 and that at Cannanore at 160.

The Institutions at Trivandrum and Trichur offered Post Graduate Programmes in 16 different specialisations.

(ii) *Private*.—There are three Private Engineering Colleges in Kerala. The T.K.M. College of Engineering, Quilon offered courses, in Civil Engineering, Mechanical Engineering, Electrical and Electronics Engineering, Electronics and Communication, Production Engineering, Computer Science and Engineering, Architecture and Chemical Engineering with a total annual intake of 430. The total annual intake of the M.A. College of Engineering, Kothamangalam stood at 310 with courses in the three basic Engineering disciplines and Electronics and Communication Engineering. N.S.S. College of Engineering, Palghat with an annual intake of 330 offered courses in the three basic Engineering subjects, Instrumentation and Control Engineering and Electronics and Communication.

(iii) *Quasi-Government*.—The Regional Engineering College, Calicut has offered degree courses in all the conventional branches and also Electronics and Communication, Computer Science and Engineering Architectural Engineering and Production and Management. The annual intake comes to 350 for Degree courses.

4.2 Polytechnics

(i) Fourteen Government Polytechnics, 6 Private Polytechnics, 4 Women's Polytechnics and one Institute of Printing Technology provide the infrastructure for Diploma level facilities under the Directorate. Apart from the 3 year Diploma courses in Civil, Electrical and Mechanical Engineering, courses were offered in Electronics, Instrument Technology Chemical Technology, Textile Technology, Polymer Technology, Wood Technology, Automobile Engineering

Tool and Die Engineering Computer Engineering and Commercial practice.

(ii) Diploma courses in Costume Design and Dress Making, Commercial Practices and Electronics are the main courses in Women's Polytechnics. The newly started Women's Polytechnic in the Ernakulam District has also introduced Diploma courses in Architectural Draftsmanship.

(iii) A three year Diploma course in Printing Technology is run by the Institute of Printing Technology at Shornur with an intake of 60 students.

(iv) Six Private Polytechnics offered Diploma courses in Civil, Mechanical and Practical Engineering except Swami Nithyananda Polytechnic where courses in Civil, Mechanical and Automobile Engineering were offered. Among the Private Polytechnics the Seethu Sahib Memorial Polytechnic conducts Diploma courses in Electronics and Automobile Engineering also.

Altogether these Diploma level Institutions meet the demands from over 3544 students.

4.3 Technical High Schools

The Institutions conducted tests for admission to the 47 Technical High Schools in the State and admitted over 2500 students observing rules regarding reservations.

4.4 Other Institutions

1. The Department has recognised Engineering Institutions to impart K.G.C.E. Courses to feed about 10,000 students. The number of recognised Institutions of this category is 99. In the above Institutions student are trained in Civil Engineering, Automobile Engineering, Mechanical Engineering and Electrical Engineering at K.G.C.E. level.

(ii) Instructions in trades like Tailoring, Embroidery and needle work are given through 366 Industrial Schools. Some Institutions are given grant-in-aid apart from the grant from other departments like Harijan Welfare and Central Social Welfare Board. About 16,500 students are studying in these Industrial Schools.

Instruction were imparted to the students in a variety of trades covering different faces of human activities related to Engineering (more than 30 trades)

4.5 Art Institutions

There are 3 Arts Institutions located at Trivandrum, Mavelikara and Trichur the first one going the College of Fine Arts. The College of Fine Arts provides a Degree in Bachelor of Fine Arts. Trichur and

Mavelikara offer Certificate and Diploma courses. Degree courses are run for painting, Sculpture and Applied Art at College of Fine Arts, Trivandrum. Diploma courses are run in Drawing and Painting Sculpture, Modelling and Commercial Art at Mavelikara and Drawing, Painting and Engineering and Commercial Art at Trichur.

4.6 Part-time courses

(i) Part time courses leading to Degree were conducted in both the Government Engineering Colleges and T.K.M. College of Engineering, Quilon in branches of Civil, Mechanical, Electrical and Electronics Engineering. Additionally part time Degree courses in Chemical Engineering at Trichur and Electronics and Communication at Trivandrum are also conducted. The total intake for the courses is 200. These courses are intended for Diploma holders employed in the industries and the part-time programme provides for avenues of career development through continuing education. A part time M.B.A. courses was started at College of Engineering, Trivandrum with an intake 30.

(ii) The College of Engineering, Trivandrum continued the part-time Postgraduate courses of 3 years duration for teaching faculty.

(iii) Faculty four year part-time Diploma courses were run in Civil, Mechanical and Electrical Engineering in Polytechnics at Trivandrum (Central Polytechnic), Kalamassery Government Polytechnic), Trichur (M.T.I.) and Calicut (Government Polytechnic). A part-time Diploma course in Textile Technology is run at Central Polytechnic, Trivandrum. The total intake capacity for these part time Diploma courses is 243.

4.7 Post Graduate and Post Diploma Course

(i) Post Graduate Course in Civil, Mechanical, Electrical and Electronics and Communication Engineering were offered at the College of Engineering Trivandrum. Trichur Engineering College conducted Post-Graduate Courses in Electrical, Mechanical and Chemical Engineering. T.K.M. College of Engineering provided for Post Graduate Courses in Industrial Refrigeration and Cryogenic Engineering. The Regional Engineering College, Calicut is also conducting Post-Graduate Courses in Civil, Mechanical and Electrical and Electronics. Total intake of 126. A master of Computer application course was also started at College of Engineering Trivandrum and T.K.M. College of Engineering, Quilon with intake of 30 each.

(ii) Post Diploma Courses were offered in the Central Polytechnic, Trivandrum in Industrial Engineering, Television Engineering and Computer application. Government Polytechnic, Kalamassery offers post Diploma Course in Air Conditioning and Refrigeration and M.T.I., Trichur offers Post Diploma in Foundry

Technology. The Supervisory Development Centre offers course in Industrial safety Engineering also. The total annual intake for all the Post Diploma Courses is 95.

4.8 Regional Engineering College, Calicut

This is a Quasi Government Institution administered by a Society registered under Societies Registration Act XXI of 1960. Administration is vested with a Board of Governors consisting of representatives of Government of India, Government of Kerala, U.G.C., All India, Council for Technical Education and Industries of the region. Instruction is offered at Under Graduate and Postgraduate levels. At Degree level the intake capacity is 350 and at Postgraduate level 30.

4.9 During the previous years of the Plan period of a number of new Institutions and courses were started. Therefore, attention had to be paid more on the consolidation and development of these Institutions during the year.

A new Computer system was inaugurated in the Polytechnic, Palai during the year.

A Post-graduate Diploma in Computer application (3 semesters duration) for Science graduates was started in April 1987 with an intake of 35 students.

4.10 Examination results

The Department was able to conduct the various examinations and publish the results as scheduled. The percentage of pass has also improved during the year. In the Diploma Examinations in Engineering in May 1987, 79 per cent of the candidates (appeared for the examination from various institutions) in the State have passed. The Kerala Government Certificate Examination in Civil, Mechanical, Electrical and Automobile Engineering Certificate Examination in Food Craft and Diploma Examination in Shorthand and Typewriting were taken over by the Department of Technical Education from the Commissioner for Government Examinations.

In the Technical High School Leaving Certificate Examination held in March 1987 a student from the Technical High School, Shertallai secured 1st Rank and 4 Technical High Schools viz. Neruvambram, Payyoli, Mananthody and Kuttippuram secured 100 per cent pass.

4.11 Central Technical Library

The Central Technical Library is functioning in the College of Engineering, Trivandrum with all facilities.

4.12 Student amenities

Various programmes have been implemented for the betterment of student amenities.

4.13 Unified vacation period

Government by G. O. Rt. No. 1525/86/H. Edn., dated 26th August 1986 have issued orders unifying the vacation period. Accordingly April and May are fixed as vacation period in the Department. The details of the different courses and their intake are enlisted as Appendices 9 and 10.

5. FACULTY TRAINING

5.1 It is the general policy of the Department to depute the members of the faculty for training to up-date their technical knowledge and to introduce them to the modern trends and developments in instructions. Under Quality Improvement Programme, faculty members were deputed for higher studies, 30 persons in post-graduate level and 3 persons in Doctoral level.

5.2 Polytechnic teacher award of I.S.T.E.

Sri P. K. Sasidharan, Head of Civil Engineering, Sree Rama Polytechnic, Valapad and Sri P. Sakthidharan, Lecturer in Mechanical Engineering, Carmel Polytechnic, Alleppey have been awarded Best Polytechnic Teacher Award 1987- 88 from Kerala for the year 1987 by the I.S.T.E. at its Annual Convention held at Sree Jayachamarajendra College of Engineering, Mysore.

6. APPRENTICESHIP TRAINING AND ALLIED ACTIVITIES

6.1 Apprenticeship training

The placement and training wing of the Directorate is looking after the special training programmes and apprenticeship training for Degree and Diploma holders in Engineering in the State.

The regional apprenticeship adviser (southern region), Madras is making best efforts to refix the number of training places in various Government Departments and Private Establishments in the State with the assistance of the placement and training wing of the Directorate. With the co-operation of the Government and Quasi Government establishments it has become possible to place for training all the Graduates and Diploma holders in emerging areas of Engineering like Electronics. But a large number of Diploma holders in Electrical and Civil Engineering and a few number of Graduates in Electrical Engineering and Civil Engineering are waiting for a chance to get a training under Apprenticeship Training Scheme.

6.2 Industry, institution collaboration

The effective interaction between industries and Educational Institutions must be there for mutual benefit of these two vital sectors.

With this view the Industrial Liaison Board met on 29th August 1987 at Ambalamedu House, F.A.C.T. Cochin. The meeting was attended by the Hon'ble Minister for Education and the Hon'ble Minister for Industries. The Chief Executives of almost all major Industries were also present for the meeting and important decisions were taken at the meeting and the Directorate makes all out efforts to follow up the decisions taken at the meeting.

6.3 Quality Improvement Programmes for students

Supervisory Development Programmes for the benefit of the final year students of Engineering Degree and Diploma were conducted under the joint auspices of the Directorate and the Regional Apprenticeship adviser (Southern Region), in almost all Engineering Colleges and Polytechnics. The programmes were well attended. Special notes on various management topics were prepared and circulated to the participants by the Directorate.

6.4 Industry Oriented Training Programmes

A Part-time Post Diploma Course on Industrial safety Engineering is conducted by the Directorate at the Supervisory Development Centre, Kalamassery. The second batch of students are undergoing the course. There is good response for employed Diploma holders for undergoing this course.

6.5 Special self employment oriented training programmes

Government have sanctioned a Post S.S.L.C. Certificate Course on Cosmetology and Beauty-Parlour Management exclusively for unemployed women. This is a Self Employment Oriented Course. The first two batches (20 each) were conducted at Kottayam and Kalamassery. The second batch will be conducted at Trivandrum and Kalamassery in 1988. The placement and training wing of the Directorate is directly conducting the course at these two centres.

The placement and training wing is conducting a self employment oriented 18 months training course for SC/ST women at three centres, namely Trivandrum, Trichur and Calicut, with 20 women at each centre. The course is on Tailoring, Toy making and Fibre products making. The minimum qualification for admission is pass in 7th standard. At the end of the 18 months training course, they are given a sewing machine also. The course is under special component plan. This is heavy rush for the admission of the course at the three centres.

6.6 During 1987-88 new training places were located for Wood Technology Diploma holders, Polymer Technology Diploma etc. in various Industries in the State.

6.7 Training in Foreman Training Institute, Bangalore

The Department is sponsoring twenty-five First Class Mechanical Engineering Diploma holders to the Foreman Training Institute, Bangalore every year. They are paid stipend at the rate of Rs. 400 per mensem. There are three disciplines for the Post-Diploma Course, 12 persons are sent for Post Diploma in Foremanship, 7 persons in Post Diploma in Foreman Training (Maintenance) and 6 pupil in Post Diploma in Foreman Training (Welding). The above courses are very useful and they find employment easily on completing the course.

With the co-operation of Regional Apprenticeship Adviser (Southern Region) the Placement and Training Wing is trying to locate more number of training places in the State so that it will be possible to place all fresh graduates and Diploma holders coming out every year without any waiting for training.

6.8 Industrial Liaison Board

The third meeting of the Industrial Liaison Board was held at the Ambalamedu Guest House F.A.C.T. on 29th August 1987. The Ministry of Industries and Education attended the meeting along with the majority of the members of the board. There were lively participation from all those who were present into meeting. There was unanimity that there should be closure like between industries and institution in the years to come.

7. OTHER ACTIVITIES

7.1 Sports and games

1. The 30th Inter Polytechnic Athletic Meet was held at Kerala Government Polytechnic, Calicut during January, 1988 and all Polytechnic activity participated in the meet. Overall championship was awarded to Sree Rama Polytechnic, Valapad.

2. All the Engineering Colleges in the State actively participated in the annual sports and games events.

3. The V All Kerala Technical High School Athletic Meet was held at Technical High School, Palai on 2nd and 3rd January, 1988. There was active participation from all Technical High Schools. Technical High School, Koratty won the overall championship.

The 10th All Kerala Technical High School Youth Festival was held at Technical High School, Ezhukone from 4th to 12th July 1987. Students from various Polytechnics participated in the festival. The inaugural function of the Science and Technology Exhibition and Silver Jubilee Celebration was held on 4th January 1988.

The All Kerala Inter-Poly-Cricket Tournament was held at Government Polytechnic, Kalamassery.

7.2 Attention paid to Scheduled Caste/Scheduled Tribe and weaker sections of the society

Some of the special interest taken by the Department for the betterment of Scheduled Caste/Scheduled Tribes is outlined below:

An expenditure of about 7.5 lakhs is anticipated under special component plan and tribal sub-plan, for giving benefits to Scheduled Caste/Scheduled Tribes students. The scheme of free supply of books with Rs. 25 and 2 sets of uniform cloth to Scheduled Caste/Scheduled Tribe students of Technical High Schools, Rs. 150 and 2 sets of uniform cloths to Scheduled Caste/Scheduled Tribe students of Polytechnics Rs. 150 and one pocket calculator for Scheduled Caste/Scheduled Tribe students of Engineering Colleges one typewriter/one sewing machine to the final year Scheduled Caste/Scheduled Tribe students of Commercial practices and costume design and dress making course respectively in the Women's Polytechnics etc. was implemented, special coaching to the needy of Scheduled Caste/Scheduled Tribe students of Engineering Colleges and Polytechnics were arranged. But the response from the students was poor 10 T.G.M.T. Training Centre to the Scheduled Caste/Scheduled Tribes were functioning during the year also.

The 15 months training programme in stuffed toy making was conducted in three Women's Polytechnics. 60 students were selected for this training who were given monthly stipend of Rs 250.

7.3 Hostel facilities

All the institutions at the College and Polytechnics and except the newly started Polytechnic and Engineering Colleges have hostel facilities attached to the institutions. The actual student intake exceeds the sanctioned intake capacity except in certain institutions. These hostel maintain mess service on a dividing system. The hostel facilities are outlined in Appendix (8).

7.4 Silver Jubilee Celebration

The Silver Jubilee Celebration of Government Women's Polytechnic, Trichur was held from 27th January 1988 to 31st January 1988 and it was inaugurated by the Hon'ble Minister of Agriculture on 30th January 1988. There was a seminar on 31st January 1988 morning on "Education for Women's Equality".

The Silver Jubilee Celebrations of Seethi Sahib Memorial Polytechnic, Tirur was held from 26th November 1987 to 29th November 1987.

8. COMMUNITY POLYTECHNIC SCHEME

The following are the six Polytechnics in the State functioning as Community Polytechnics:—

1. Swami Nithyananda Polytechnic, Kanhangad
2. Government Polytechnic, Perinthalmanna
3. Sree Rama Polytechnic, Valapad
4. N.S.S. Polytechnic, Pandalam
5. Carmel Polytechnic, Alleppey
6. Thiagarajar Polytechnic, Alagappanagar

These Polytechnics besides imparting instruction in different Engineering subjects make use of the technical man power and infrastructural facilities in the institutions for schemes benefiting the rural public.

These Polytechnics have conducted a variety of community development programmes, such as conducting seminars and workshops on Technician education and rural development, "Rural housing and low cost building materials", "Renewable sources of energy", Socio-economic survey of villages, a Scientific Technological and Educational exhibition and demonstrated several smokeless chulas a solar cooker biogas plants.

The main objective of Socio-economic survey is to identify the development potential and the felt needs of the people in rural areas. All these Polytechnics have completed the survey in selected rural areas and the development potential is measured. On the basis of the survey 'Manpower development and training' intended to teach the rural people the basic skills, knowledge and attitude required to practice any occupational activity is conducted. Job oriented skill development programmes were conducted in the following trades. A good number of youth have undergone this training and the process is still continuing.

These community Polytechnics undertake promotion of transfer of technology and tested technology to improve conditions in all walks of rural life. The fields in which items of technology had been attempted by these institutions are.

1. Biogas plants
2. Filter point tube wells
3. Smokeless chollahs
4. Improved pottery and wheel
5. Solar appliances
6. Agricultural implements.

In the area of 'Manpower development and training' the institutions have conducted short-term training programmes of various duration in various different trades for the benefit of the unemployed youths and School drop outs aiming at providing skills for securing gainful self/wage employment.

The involvement of as many rural youths under training was ensured for providing technical services to the rural people in this respective villages.

In addition to technical services, villages also need support for various kind to improve their educational skills to widen the scope of their activities, to enhance their productivity to facilitate the flow of financial and other assistance from various development agencies to improve their surroundings, to enrich their social and cultural life and in other fields. The kind of support needed were of varied nature and the community Polytechnics conducted scientifically designed activities aimed at this direction.

Dissemination of information is another important area of activity taken up by the Community Polytechnics. Lack of information leads to the lack of orientation of rural people towards new ideas. Total integrated rural development is a main item in the National Policy of education and these Polytechnics aim to achieve this goal.

A review committee of the Government of India has gone into the working of the community Polytechnics and has given some suggestion which will be implemented in formulating future programmes.

9. LAL BAHADUR SHASTRY ENGINEERING RESEARCH AND CONSULTANCY CENTRE

During the year 1987-88, Lal Bahadur Shastry Engineering Research and Consultancy Centre, conducted workshops on the recent Developments of Concrete Technology and Power System studies on P. C. environment.

The first batch of Postgraduate Diploma holders in Computer applications comes out in September 1987. During December 1987 this Centre conducted a Computer Programming language course at Trivandrum. This was largely attended by participants having qualifications in other computer languages. The course outline included programme looping, functions, structures pointers UNIX system interfere and other advanced topics. The orientation workshop on slack monitoring was also conducted on 7th January 1988 at Kalamassery with a large number of industrial participants. An exhibition of modern sophisticated slack monitoring equipments was conducted by Notal Chromatographs Thano and Engridtech Instruments Ltd. Delhi.

The Computer Society of India conducted a National Standard Test in Programming Computers during 1987 and the third rank in the list was secured by senior programmer of the Lal Bahadur Shastri Engineering Research and Consultancy Centre.

The centre has completely executed a major inter-disciplinary project work for the strengthening and widening of N.H-17. The Project included contour surveying, Benekelnem tests, traffic analysis payment design, estimating etc.

Air pollution monitoring is carried out by the centre through analysis of stack omission in various factories in the State. The centre has a laboratory recognised by the Pollution Control Board for the purpose at its Regional Unit at Kalamasserry. Other works is environmental studies and pollution control included preparation of projects for garbage disposal using incinerators, and for assessment of umpset of adaptics and protective technology on man and his environment. Some of the other projects undertaken any executed by the centre during the period under consideration are listed below:

(1) Preparations of drawings and estimates for rewiring and installation of generator with PAC 925,00.

(2) Preparation of architectuaral and structural design and drawings and estimates for rewiring and installation of generator with PAC 92,500,

(3) Preparation of architectuaral and structuaral design and drawings and estimate for head office building PAC 2.75 lakhs.

(4) Conduct of course in DPS.

(5) Soft wire development in connection with test.

(6) *Kerala State Science and Technology Museum*.—During the year many new items of exhibits have been added to the galleries and the garden. The galleries set up and opened to the public in July, 1984 have now been completely re-arranged. The major changes effected are mentioned below.

(i) *Gallery on 'Power and Motion'*.—The original gallery on mechanical engineering held only thirty-five exhibits/Models taken on loan from the College of Engineering, Trivandrum. The Museum has now procured eighty exhibits covering all aspects of Automobile, Steam Engines, Boilers and other Branches of Power Engineering. The original gallery has now been replaced by a new and expensive gallary on 'Power and Motion'. It is not only a store house of information and entertainment, but also a research laboratory for students of Science and Technology.

(ii) *The Gallery on Architecture*.—Many new exhibits have been added to the Gallery expending it to double the original size. The scale model of the proposed Planatorium Building, presented here is a major attraction for the visitors.

(iii) *The gallery on Electricity and Electronics.*—Many more exhibits designed and fabricated by the museum have been added to this gallery.

(iv) *Outdoor Exhibits.*—A four meter long working model of 'Water Train'—A new invention having the scope of being developed into an economical water transportation system has been designed and not up as an impressive out-door exhibit on the front lawn of the museum. Among the two IAF planes donated to the museum by the President of India—one a Gnat Fighter Plane—has already been brought to the Museum and positioned on an ornamental pedestal portraying its chivalrous service in the defence of our country.

(v) *The Planatorium.*—Preliminary work on this has been completed. Architectural design of the building, tender schedule and panel of contractors are ready and the civil works will be started shortly.

(vi) *Science and Technology Film Show.*—The Museum has procured a good collection of interesting films on Science and Technology and environment. Regular film shows are conducted twice a day for the visitors.

10. INSTITUTE OF HUMAN RESOURCES DEVELOPMENT FOR ELECTRONICS

The institute for Human Resources Development for Electronics has been established by the Government for taking up various activities in connection with the generation of highly skilled man power required in the Electronic Sector.

The institute has been registered as an autonomous body under the Travancore Cochin Library, Scientific and Charitable Societies Act on 28th January, 1987. The activities of the Institute were inaugurated by the Honourable Union Minister of State for Electronics. It can Co-ordinate the activities of various institutions in addition to conducting courses and training programmes at different levels. It is also the aim of the Institute to make the benefits of Electronics visible and available to all sections of people, in all parts of our vast country. Highly specialised and trained manpower and a continuous updating of this man power stock are of Crucial importance for the growth of electronics.

The main objectives of the institute are:

1. To Conduct Graduate, Postgraduate and Post Diploma Courses in Electronics and related course of appropriate duration.

A few identified areas include.

- (1) Electronic design technology.
 - (2) Television and V. C. R. Technology.
 - (3) Medical Electronics.
 - (4) B. O. Medical Instrument Technology.
 - (5) Process Control Instrumentation.
 - (6) Computer Engineering/Application.
 - (7) Telecommunication Systems.
2. To conduct intensive courses to generate personnel for maintenance and servicing of electromedical and allied equipments.
 3. To Conduct Courses to train service technicians for common consumer electronic products such as Television-Tape Recorders and Video Casette Recorders.
 4. To conceive and implement cross migration programmes.
 5. To act as model agency and centre for the Development of Electronic teaching and training aids.
 6. To offer continuing education programmer for electronic faculty in Engineering Colleges and Polytechnics.
 7. To conceive and implement appropriate programmer to create an awareness in society.
 8. To propagate electronic education programmes in Schools with modular programmes,
 9. To conduct workshops, seminars and refresher courses in emerging areas.
 10. To undertake training of system analysis.
 11. To undertake development of application software packages.
 12. To conduct intensive courses in modern electronic laboratory programmes
 13. To design and develop teaching resources materials.
 14. To set up a product design and assembly centre for electronic laboratory equipments.
 15. To propagate microprocessor expertise among practicing engineers and technical teachers.
 16. To produce educational video tapes and other Video software.
 17. To conduct dedicated training programmes for personnel from industry.
 18. To franchise the technical expertise generated at the Institute to other agencies including private sector to enlarge the scope of manpower development programmes in important areas.

APPENDIX 1

Members of State Board of Technical Education

1. Hon'ble Minister for Education : Chairman
2. The Secretary to Government Higher Education
3. Do. General Education
4. Do. Finance Department
5. Do. Planning Department
6. Do. Industries Department
7. The Director of Industries and Commerce
8. The Director of Collegiate Education
9. Director of Medical Education
10. Director of Public Instruction
11. Chief Engineer, P.W.D. (General)
12. Do (Electrical) K.S.E. Board
13. Do. Water and Waste Water Authority
14. Chief Electrical Inspector, Trivandrum
15. University of Kerala (Nominee of Universities)
16. University of Calicut do.
17. Gandhiji University do.
18. Cochin University do.
19. Agricultural University do.

Nominees of Government of India

20. Deputy Educational Adviser (T) Ministry of Education
S.R.O., Madras
21. Director, Board of Apprenticeship Training, Ministry of
Education, S.R.O., Madras
22. Principal, Technical Teachers Training Institute, Madras

Nominees of Professional Bodies

23. Institution of Engineers (India)
24. Indian Society for Technical Education

Nominees of Research Organisation

25. Vikram Sarabhai Space Centre
26. Council of Industrial and Scientific Research
27. L.B.S.E.R. and C. Centre

28. Electronic Research and Development Centre, KELTRON, Trivandrum

Parliament and State Legislature

29. Sri George Joseph, Mundakkal M. P. (Muvattupuzha)
30. Sri V. V. Joseph, M.L.A., Muvattupuzha

Recognised Associations :—

31. Chairman, K. S. Polytechnic Students' Union
32. President, Diploma Engineering Association, Kerala

Engineering Industries :—

33. Representative, Association of Indian Engineering Industry
34. Chairman and Managing Director, KELTRON, Trivandrum
35. M.D., H.M.T., Kalamassery
36. M.D., F.A.C.T., Udyogamandal

Armed Services :—

37. Brig P. M. Menon, Director, Vehicle Research Centre, Ahmednagar

Technical Institutions

A. Engineering Colleges :—

38. Dr. S. Narayana Iyer, Principal, E. C. Trivandrum
39. Prof. P. O. J. Labba, Principal, T.K.M.E.C., Quilon
40. Dr. S. Unnikrishna Pillai, Principal, R.E.C., Calicut

B. Polytechnics :—

41. Sri K.S.S. Naik, Principal, M.T.I., Trichur
42. N. Bhaskara Kurup, Principal, N.S.S. Polytechnic, Pandalam
43. Sri L. Mathew, Superintendent, J.T.S., Adoor

Experts :—

- | | |
|--|-------------|
| 44. Dr. R. Jayaraman, Dean of P. G. Studies, E. C. Trivandrum | Civil |
| 45. Dr. R. Ravikumar, Dean of P. G. Studies, Engineering College, Trivandrum | Mechanical |
| 46. Dr. K. A. Muraliedharan, Professor, College of Engineering, Trivandrum | Electrical |
| 47. Dr. M. Harisankar, Professor, E.C., Trivandrum | Electronics |
| 48. Dr. Govindan Aniyath Paral, Professor, Engineering College, Trichur | Chemical |

49. Sri Jipson Charles, Principal, Women's Polytechnic, Trivandrum	Commerce
50. Sri V. K. Jawaharlal, Principal, I.P.T., Shoranur	Printing
51. Sri V. Nirmalan Thampy, Joint General Manager, K.S.R.T.C., Trivandrum	Automobile
52. Dr. Jose, Common Facilities Centre, Industrial Estate, Changanacherry	Polymar Technology
53. Dr. M. S. Valiathan, Director, S.C.M. Centre, Trivandrum	Bio-engineering
54. Miss Thankam Philip, Principal, Institute of Hotel Management, Bombay	Food Craft
55. Sri C. L. Porinchukutty, Principal, College of Fine Arts, Trivandrum	Fine Arts
56. Head of Department of Textile Technology, P.S.G. College of Engineering, Coimbatore	Textile Technology
57. Dr. K. Ramachandran, Professor of Placement and Training, D.T.E's Office	Placement and Training
58. Dr. K. Sathyanandan, Professor of Physics, University of Cochin	Science
59. Professor G. Nagappan Nair (Retd. Principal) Nalanchira, Trivandrum	Mathematics
60. Director of Technical Education	Convener State Committee in Science and Technology and Environment
61. Chairman	
62. Director	Kerala State Science and Technology Museum

Members of the Board of Studies in Engineering and Technology

Chairman :—

Director of Technical Education

Members :—

1. Director of Public Instruction
2. Chief Engineer (General), P.W.D., Trivandrum

3. Chief Engineer (Electrical), K.S.E.B., Trivandrum
4. Sri K. S. Sreenivasa Naik, Principal, M.T.I., Trichur
5. Sri K. P. Pothan, Principal, Central Polytechnic, Trivandrum
6. Dr. P. Sivasankara Pillai, Head of the Department of Chemical Engineering, Engineering College, Trichur
7. Sri N. Bhaskara Kurup, Principal, N.S.S. Polytechnic, Pandalam
8. Sri O. K. Sreedharan, Professor of Commerce, Government Arts College, Trivandrum
9. Principal, Engineering College, Trivandrum
10. Deputy Director (General), D.T.E's Office, Trivandrum
11. Professor-in-charge, Technical Teacher's Training Institute Extension Centre, Kalamassery
12. Joint Director, D.T.E's Office, Trivandrum (Planning)
13. Joint Director (A.I.W.), D.T.E's Office, Trivandrum

APPENDIX 2

<i>Sl. No.</i>	<i>Name</i>	<i>Office held</i>
1.	Dr. T. S. Ramanatha Iyer	.. Director till 31st October 1987 A.N.
2.	„ R. Jayaraman	.. Director from 31st October 1987 A.N.
3.	„ M. S. Abdul Kadir	.. Joint Director (Academic Inspection Wing) till 31st May 1987
4.	„ P. V. John	.. do. till 13th January 1988
5.	„ R. Ravikumār	.. do. from 15th January 1988
6.	Sri C. N. Rajan	.. Joint Director (Planning)
7.	Prof. L. Sreenivasan	.. Joint Director (Placement and Training) from 14th January 1988
8.	Sri K. P. Hamza	.. Joint Controller of Technical Examination
9.	Dr. S. Narayanan	.. Professor (Direct Payment)
10.	Sri B. Sreedhara Warriar	.. Deputy Director (General)
11.	„ N. Ganapathy Iyer	.. do. (Monitoring)

APPENDIX 2—(cont.)

<i>Sl. No.</i>	<i>Name</i>	<i>Office held</i>
12.	Sri M. K. Kumaran	.. Deputy Director (Placement and Training)
13.	„ G. Padduranga Das	.. Administrative Officer, till 9th October 1987
14.	„ Francis Xavier	.. do. till 4th February 1988 A.N.
15.	„ S. Narayana Pillai	.. do. from 5th February 1988
16.	„ P. Joseph	.. Finance Officer
17.	„ N. E. Skariah	.. Administrative Assistant, till 5th August 1987
18.	„ V. P. Vivekanandan	.. do. till 30th September 1987
19.	„ P. Thomas Mathew	.. do. from 1st October 1987
20.	„ S. Salim	.. Technical Officer, Audio Visual Cell
21.	„ Narayana Das	.. do. A. V. Cell
22.	„ G. Mithran	.. Accounts Officer
23.	„ P. Vidyadharan	.. do. (General)
24.	„ P. Bhaskaran Nair	.. Public Relations Officer
25.	„ C. Radhakrishna Pillai	.. Technical Officer, from 22nd July 1987
26.	„ N. Parameswaran	.. do.
27.	Smt. P. D. Mariamma	.. Manpower Officer till 14th June 1987
28.	„ N. Santhakumari	.. do. from 15th June 1987
29.	Sri P. K. George	.. Research Officer till 15th December 1987
30.	„ A. Abdul Vaheed	.. Stock verification Officer till 24th August 1987
31.	„ Surendran	.. do. from 1st January 1988
32.	„ P. M. Joseph	.. Technical Officer
33.	„ Ouseph	.. do. Examination wing

APPENDIX 2—(cont.)

<i>Sl. No.</i>	<i>Name</i>	<i>Office held</i>
34.	Sri Narayana Das	Technical Officer Examination wing
35.	„ P. S. Aravindakshan	Joint Director (Regional Office, Calicut)
36.	„ D. Balakrishnan	do. Kothamangalam

Autonomous bodies.—

1.	Sri K. Ramachandran Nair	Director, Kerala State Science and Technology Museum
2.	Dr. K. P. Parameswaran Pillai	Additional Director, Lal Bahadur Shastri Engg. Research and Consultancy Centre
3.	Sri M. Parameswaran Nair	Special Officer, Institute for Manpower Development Electronics

APPENDIX 3

List of heads of institutions**NAME OF INSTITUTIONS:****I. Engineering Colleges.—**

1.	College of Engineering, Trivandrum	.. Dr. R. Jayaraman
2.	Government Engineering College, Trichur	.. „ R. Sreedharan Nair
3.	Government Engineering College, Cannanore	.. „ N. Sukesan Nair
4.	T.K.M. College of Engineering, Quilon	.. Prof. P. C J. Lebba
5.	N.S.S. College of Engineering, Palghat	.. „ C. Somasekharan
6.	M. A. College of Engineering, Kothamangalam	.. Dr. J. Issac
7.	Regional Engineering College, Calicut	.. „ S. Unnikrishna Pillai

APPENDIX 3—(cont.)

II. *Polytechnics.*—

- | | | | |
|-----|---|----|---------------------------------|
| 1. | Central Polytechnic, Tri-
vandrum | .. | Sri K. P. Pothan |
| 2. | Government Polytechnic,
Kottayam | .. | „ N. K. Chacko |
| 3. | Government Polytechnic,
Kalamassery | .. | „ N. K. Madhusudhanan |
| 4. | Maharajas Technological
Institute, Trichur | .. | „ K. S. Sreenivasa Naik |
| 5. | Sree Rama Polytechnic,
Valapad | .. | „ M. Madhavan |
| 6. | Government Polytechnic,
Perinthalmanna | .. | „ K. M. Govindankutty |
| 7. | Kerala Government Poly-
technic, Calicut | .. | „ P. Alavikutty |
| 8. | Government Polytechnic,
Cannanore | .. | „ V. K. Mahamood |
| 9. | Do. Muttom | .. | „ K. Chandran |
| 10. | Do. Palghat | .. | „ N. Ramachandra
Pisharady |
| 11. | Do. Kothamangalam | .. | „ Cyriac J. Kandathil |
| 12. | Do. Meenangadi | .. | „ M. Jayaraj |
| 13. | Do. Palai | .. | „ N. K. Balakrishna Menon |
| 14. | Do. Vennikulam | .. | „ E. Narayana Iyer |
| 15. | Institute of Printing
Technology, Shoranur | .. | „ P. M. Ganesan |
| 16. | Sree Narayana Poly-
technic, Kottiyam | .. | „ N. G. Bahuleyan |
| 17. | N.S.S. Polytechnic,
Pandalam | .. | „ M. R. Parameswarar
Nair |
| 18. | Carmel Polytechnic,
Alleppey | .. | „ P. Balan |
| 19. | Thiagarajar Polytechnic,
Alagappanagar | .. | „ K. V. Krishnadas |
| 20. | Seethi Sahib Memorial
Polytechnic, Tirur | .. | „ K. Abdulla |
| 21. | Swamy Nithyananda
Polytechnic, Kanhangad | .. | „ V. V. Ramakrishnan
Nambiar |

APPENDIX 3—(cont.)

III. Women's Polytechnics.—

- | | | | |
|----|----------------------|----|--------------------|
| 1. | Women's Polytechnic, | .. | Sri Jipson Charles |
| | Trivandrum | | |
| 2. | Do. Trichur | .. | „ M. Narayanan |
| 3. | Do. Calicut | .. | „ M. Venkiteswaran |
| 4. | Do. Ernakulam | .. | Smt. P. P. Kadeeja |

IV. Fine Arts.—

- | | | | |
|----|----------------------------|----|-------------------------|
| 1. | College of Fine Arts, Tri- | .. | Sri Kanai Kunhiraman |
| | vandrum | | |
| 2. | R. V. Institute of Fine | .. | „ T. A. Sukumara Menon. |
| | Arts, Mavelikara | | |
| 3. | Institute of Fine Arts, | .. | „ V. S. Balakrishnan |
| | Trichur | | |

- | | | | |
|----|-------------------------|----|--------------------|
| V. | Supervisory Development | .. | „ M. Rajendra Babu |
| | Centre, Kalamassery | | |

VI. Technical High Schools.—

- | | | | |
|-----|------------------------|----|---------------------------|
| 1. | Technical High School, | .. | Sri V. Ravindranatha Babu |
| | Nedumangad | | |
| 2. | Do. Attingal | .. | „ M. Madhusoodanakumar |
| 3. | Do. Adoor | .. | „ T. K. Vasavan |
| 4. | Do. Ezhukone | .. | „ K. Muhammed Haneefa |
| 5. | Do. Shertallai | .. | „ P. C. Antony |
| 6. | Do. Krishnapuram | .. | „ T. M. Joseph |
| 7. | Do. Pampady | .. | „ T. I. Thomas |
| 8. | Do. Palai | .. | „ V. J. Kuriakose |
| 9. | Do. Perumbavoor | .. | „ P. M. Abdulkhadir |
| 10. | Do. Koratty | .. | „ T. D. Varunni |
| 11. | Do. Kodungallur | .. | „ K. V. Raveendran |
| 12. | Do. Trichur | .. | „ C. Ramachandran |
| 13. | Do. Kunnankulam | .. | „ K. V. Dharmarathnam |
| 14. | Do. Chittur | .. | „ K. Venugopalan |
| 15. | Do. Shoranur | .. | „ A. Ramachandrah |
| 16. | Do. Badagara | .. | „ E. Rajan |
| 17. | Do. Cannanore | .. | „ A. Haridas |
| 18. | Do. Calicut | .. | „ A. P. Chakrapani |
| 19. | Do. Mattannur | .. | „ K. R. Kochunni |
| 20. | Do. Cheruvathur | .. | „ |
| 21. | Do. Palghat | .. | „ N. Ramachandran |
| 22. | Do. Kuttippuram | .. | „ K. P. Krishnan Unni |
| 23. | Do. Sulthan Battery | .. | „ K. V. Ramalingam |
| 24. | Do. Adimali | .. | „ J. Abdul Salam |

APPENDIX 3—(cont.)

25.	Technical High School, Manantoddy	..	Sri T. T. Mathew
26.	Do. Vannappuram	..	„ E. V. Georgekutty
27.	Do. Kulathur	..	„ K. Lakshmanan
28.	Do. Naruvambram	..	„ T. V. Canhdramohanan
29.	Do. Teekoy	..	„ R. Sidharaman Nair
30.	Do. Payyoli	..	„ C. P. Kunhikrishnan Nair
31.	Do. Mogralputhur	..	„ R. Gopinatha Pillai
32.	Do. Elanji	..	„ M. Sadasivan
33.	Do. Kulathupuzha	..	„ V. Surendran
34.	Do. Manjeri	..	„ K. Raman
35.	Do. Nannamukku	..	„ P. M. Rajan
36.	Do. Mulanthuruthy	..	„ P. R. Karthikeyan
37.	Do. Kavalam	..	„ K. G. Narayanan Asari
38.	Do. Haripad	..	„ K. Sivarajan
39.	Do. Thirurangadi	..	„ K. T. Kunhumoideen
40.	Do. Ulloor	..	„ A. Abdul Karim
41.	Do. Purapuzha	..	„ P. N. Mathew
42.	Do. Naduvil	..	„ T. S. Thomas
43.	Do. Varapetty	..	„ P. V. Scarjah
44.	Do. Kurichi	..	„ V. N. Raju
45.	Do. Kadaplamattom	..	„ C. J. Paul
46.	Do. Kanjirappally	..	„ K. K. Mohammed Yousef
47.	Do. Ayavana	..	„ N. V. Kumaran

VII. Government Commercial Institute.—

1.	Government Commercial Institute, Trivandrum	..	Sri R. Krishnankutty
2.	Do. Punalur	..	Smt. K. Girija Devi
3.	Do. Pothanikkad	..	Sri L. Levakumar
4.	Do. Lalom	..	Smt. K. Thulasi
5.	Do. Alleppey	..	Sri E. Gopakumar
6.	Do. Ettumanoor	..	„ G. Mohanaprasad
7.	Do. Kothamangalam	..	„ M. P. Mathew
8.	Do. Kanchiyar	..	„ V. A. Joseph
9.	Do. Ernakulam	..	„ Ramadathan Unni
10.	Do. Mala	..	„ T. A. Baby
11.	Do. Palghat	..	Smt. V. Indira
12.	Do. Manjeri	..	Sri K. Muhammed Abdurehiman
13.	Do. Quilandy	..	„ K. P. Jyothiram
14.	Do. Thaliparamba	..	Smt. V. T. Aley
15.	Do. Meenangadi	..	Sri M. Sukumaran
16.	Do. Kallachi	..	„ T. K. Kelu Nair
17.	Do. Kannapuram	..	Smt. K. T. Suganthi

APPENDIX 4

Staff position 1967-88

Category of Institution	Class I		Class II		Class III		Class IV	
	M	F	M	F	M	F	M	F
1	2	3	4	5	6	7	8	9
Engineering Colleges—Government ..	72	16	171	27	366	81	53	27
Engineering Colleges—Private ..	170	36	192	63	170	33	43	7
Regional Engineering Colleges								
Quasi Government ..	135	20	7	22	164	34	79	10
Polytechnics—Government ..	60	7	301	80	566	102	70	17
Polytechnics—Private ..	56	6	134	22	222	21	27	6
Women's Polytechnics (All Govern- ment) ..	5	4	35	36	43	18	12	3
Technical High Schools (All Government) ..	16	..	154	31	974	105	115	22
Fine Arts Institution (All Govern- ment) ..	3	..	25	1	28	4	7	2
Government Commercial Institution ..	3	..	17	16	30	27	23	13
Government Pre-vocational Training Centre ..	..	..	12	1	38	21	21	11
Extension Government Food Craft Institute ..	5	..	39	14	42	11	8	..

APPENDIX 5

List of Technical Institutions in Kerala

<i>Sl. No.</i>	<i>Category</i>	<i>Name of Institution</i>	<i>Location</i>	<i>Management</i>
(1)	(2)	(3)	(4)	(5)
I.	Engineering Colleges	College of Engineering, Trivandrum	1. Trivandrum	Government
		Engineering College, Trichur	2. Trichur	do.
		Engineering College, Cannanore	3. Cannanore	do.
		T K.M. College of Engineering, Quilon	4. Quilon	Private
		M. A. College of Engineering	5. Kothamangalam	do.
		N.S.S. College of Engineering	6. Palghat	do.
		Regional Engineering College	7. Calicut	Quasi-Government
II.	Polytechnics	Government Polytechnic	1. Kottayam	Government
		Do.	2. Kalamassery	do.
		Do.	3. Perinthalmanna	do.
		Do.	4. Cannanore	do.
		Do.	5. Muttom	do.
		Do.	6. Palghat	do.
		Do.	7. Kalpetta	do.
		Do.	8. Kothamangalam	do.
		Do.	9. Palai	do.
		Do.	10. Vennikulam	do.
		Central Polytechnic	11. Trivandrum	do.
		Kerala Government Polytechnic	12. Calicut	do.
		Sree Rama Polytechnic	13. Valapad	do.
		Maharaja's Technological Institute	14. Trichur	do.
		S N Polytechnic	15. Kottiyam	Private

	N.S.S. Polytechnic	16. Pandalam	do.
	Carmel Polytechnic	17. Alleppey	do.
	Thiagarajar Polytechnic	18. Alagappanagar	do.
	S.S.M. Polytechnic	19. Tirur	do.
	Swami Nithyananda Polytechnic	20. Kanhangad	do.
III. Women's Polytechnics	Women's Polytechnic	1. Trivandrum	Government
	Do.	2. Trichur	do.
	Do.	3. Calicut	do.
	Do.	4. Ernakulam	do.
IV. Printing Technology Institute	Institute of Printing Technology	1. Shoranur	do.
V. Technical High Schools	Technical High School	1. Attingal	do.
	Do.	2. Nedumangad	do.
	Do.	3. Kulathoor	do.
	Do.	4. Ulloor	do.
	Do.	5. Adoor	do.
	Do.	6. Ezhukone	do.
	Do.	7. Kanjappally	do.
	Do.	8. Pampady	do.
	Do.	9. Palai	do.
	Do.	10. Teekoy	do.
	Do.	11. Kurichy	do.
	Do.	12. Kadaplamattom	do.
	Do.	13. Kulathupuzha	do.
	Do.	14. Adimali	do.
	Do.	15. Vannappuram	do.
	Do.	16. Purapuzha	do.
	Do.	17. Krishnapuram	do.
	Do.	18. Kavalam	do.

APPENDIX 5—(cont.)

<i>Sl. No.</i> (1)	<i>Category</i> (2)	<i>Name of Institution</i> (3)	<i>Location</i> (4)	<i>Management</i> (5)
		Technical High School	19. Haripad	Government
		Do.	20. Sherthalai	do.
		Do.	21. Elanji	do.
		Do.	22. Mulanthuruthi	do.
		Do.	23. Ayavana	do.
		Do.	24. Varapetty	do.
		Do.	25. Perumbavoor	do.
		Do.	26. Koratty	do.
		Do.	27. Kodungalloor	do.
		Do.	28. Kunnamkulam	do.
		Do.	29. Trichur	do.
		Do.	30. Chittur	do.
		Do.	31. Palghat	do.
		Do.	32. Shoranur	do.
		Do.	33. Badagara	do.
		Do.	34. Calicut	do.
		Do.	35. Payyoli	do.
		Do.	36. Kuttippuram	do.
		Do.	37. Manjeri	do.
		Do.	38. Nannamukku	do.
		Do.	39. Tirurangadi	do.
		Do.	40. Cannanore	do.
		Do.	41. Naruvambram	do.
		Do.	42. Naduvil	do.
		Do.	43. Mattannur	do.
		Do.	44. Manantoddy	do.
		Do.	45. Sulthan Battery	do.
		Do.	46. Cheruvathur	do.
		Do.	47. Mogral Puthur	do.

VI. Commercial Institute	Government Commercial Institute	1. Trivandrum	Government
	Do.	2. Punalur	do.
	Do.	3. Alleppey	do.
	Do.	4. Ettumannur	do.
	Do.	5. Kanchiyar	do.
	Do.	6. Ernakulam	do.
	Do.	7. Kothamangalam	do.
	Do.	8. Mala	do.
	Do.	9. Manjeri	do.
	Do.	10. Quilandy	do.
	Do.	11. Meenangadi	do.
	Do.	12. Taliparamba	do.
	Do.	13. Palghat	do.
	Do.	14. Lalam	do.
	Do.	15. Pothanikkad	do.
	Do.	16. Kallachi	do.
	Do.	17. Kannapuram	do.
VII. Fine Arts Institute	College of Fine Arts	1. Trivandrum	do.
	Institute of Fine Arts	2. Mavelikkara	do.
	Do.	3. Trichur	do.
VIII. Industrial/ T.G.M. Centre	Tailoring and Garment Making Training Centre	1. Pattom	do.
	Do.	2. Quilon	do.
	Do.	3. Tripunithura	do.
	Do.	4. Njarakkal	do.
	Do.	5. Kalpathy	do.
	Do.	6. Kondoty	do.
	Do.	7. Badagara	do.
	Do.	8. Dharmadam	do.
	Do.	9. Payyannur	do.

APPENDIX 5—(cont.)

<i>Sl. No.</i> (1)	<i>Category</i> (2)	<i>Name of Institution</i> (3)	<i>Location</i> (4)	<i>Management</i> (5)
		Tailoring and Garment Making Training Centre	10. Kumili	Government
		Do.	11. Thodupuzha	do.
		Do.	12. Edappally	do.
		Do.	13. Chawghat	do.
		Do.	14. Manacaud	do.
		Do.	15. Ponnani	do.
		Do.	16. Vengara	do.
		Do.	17. Kuttichira	do.
		Do.	18. Sultan Battery	do.
		Do.	19. Kasaragod	do.
		Do.	20. Trichur	do.
		Do.	21. Manarghat (S.C./S.T.)	do.
		Do.	22. Chathannur (S.C./S.T.)	do.
		Do.	23. Mananthody (S.C./S.T.)	do.
		Do.	24. Agali (S.C./S.T.)	do.
		Do.	25. Sholayar (S.C./S.T.)	do.
		Do.	26. Kallada (S.C./S.T.)	do.
		Do.	27. Vaithiri (S.C./S.T.)	do.
		Do.	28. Peermedu (S.C./S.T.)	do.

	Do.	29. Rajakkad (S.C./S.T.)	do.
	Do.	30. Melukkavu (S.C./S.T.)	do.
	Do.	31. Kollayam	do.
	Tailoring and Trade School	32. Haripad	do.
	Do.	33. Devikulam	do.
	Do.	34. Irinjalakuda	do.
	Do.	35. Vadakkancherry	do.
IX. Vocational Training	Tailoring Training Centre	1. Parassala	Government
	Do.	2. Pachallur	do.
	Do.	3. Karumkulam	do.
	Do.	4. Kanjiramkulam	do.
	Do.	5. Maranallur	do.
	Do.	6. Chirayinkil	do.
	Do.	7. Chengannur	do.
	Do.	8. Kandala	do.
	Weaving Training Centre,	9. Aralumoodu	do.
	Composing and Printing Centre	10. Vattiyookavu	do.
	Book Binding Centre	11. Palkulangara	do.
	Do.	12. Kulathur	do.
	Ratton Training Centre	13. Paraniyam	do.
X. Pre-Vocational Training Centre	Pre-Vocational Training Centre	1. Attingal	do.
	Do.	2. Cannanore	do.
	Do.	3. Kodungallur	do.
	Do.	4. Manjeri	do.
	Do.	5. Nedumangad	do.

APPENDIX 5—(cont.)

<i>Sl. No.</i>	<i>Category</i>	<i>Name of Institution</i>	<i>Location</i>	<i>Management</i>
(1)	(2)	(3)	(4)	(5)
		Pre-Vocational Training Centres	6. Mattannur .	Government
		Do.	7. Kunnamkulam	do.
		Do.	8. Koraty	do.
		Do.	9. Pampady	do.
		Do.	10. Krishnapuram	do.
		Do.	11. Ezhukone	do.
		Do.	12. Chittur	do.
		Do.	13. Shoranur	do.
		Do.	14. Cheruvathur	do.
		Do.	15. Badagara	do.
		Do.	16. Perumbavoor	do.
		Do.	17. Sherthallai	do.
		Do.	18. Adoor	do.
		Do.	19. Palai	do.
XI.	Food Craft Institute	Food Craft Institute	1. Kalamassery	Quasi—Govern- ment
		Food Craft Extension Centre	2. Trivandrum	do.
		Do.	3. Kottayam	do.
		Do.	4. Trichur	do.
		Do.	5. Calicut	do.
		Do.	6. Kothamangalam	do.
		Do.	7. Cannanore	do.

APPENDIX 6

Intake capacity and courses offered**1. ENGINEERING COLLEGES:**

<i>Courses offered</i>	<i>Institute where offered</i>	<i>Intake</i>
(1)	(2)	(3)

A. Postgraduate Courses (Electives)**1. Civil Engineering.—**

1. Structural Engineering	College of Engineering, Trivandrum	6
	Regional Engineering, College, Calicut	10
2. Hydraulics	College of Engineering, Trivandrum	4
3. Soil Mechanics	College of Engineering, Trivandrum	6
4. Public Health Engineering	College of Engineering, Trivandrum	4
5. Transportation and Traffic Engineering	College of Engineering, Trivandrum	4

2. Mechanical Engineering (Electives).—

1. Heat Power Engineering	College of Engineering, Trivandrum	4
2. Machine Design	College of Engineering, Trivandrum	4
3. Production Engineering	College of Engineering, Trichur	6
4. Refrigeration and Air Conditioning	Regional Engineering College, Calicut	10
5. Propulsion Engineering	College of Engineering, Trivandrum	4
6. Industrial Refrigeration and Cryogenic Engi- neering	T. K. M. College of Engineering, Qulon	6
7. Industrial Engineering	Regional Engineering College, Calicut	8

3. Electrical Engineering (Electives).—

1. Power System	College of Engineering, Trivandrum	6
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APPEFDIX 6—(cont.)

<i>Courses offered</i>	<i>Institute where offered</i>	<i>Intake</i>
(1)	(2)	(3)
2. Electrical Machine Design	College of Engineering, Trivandrum	4
3. Control System	College of Engineering, Trivandrum	4
	College of Engineering, Trichur	6
4. Navigation and Guidance Control	College of Engineering, Trivandrum	4
5. Instrumentation and Control System	Regional Engineering College, Calicut	10
4. <i>Electronics and Telecommunication (Electives)—</i>		
1. Microwave Engineering	College of Engineering, Trivandrum	6
2. Applied Electronics	College of Engineering, Trivandrum	4
5. <i>Chemical Engineering (Electives)—</i>		
1. Process Control	College of Engineering, Trichur	6
Total		126

B. M.B.A and M.C.A. P.G. Course

1. Master in Business Administration (M.B.A.) Part-time course	College of Engineering, Trivandrum	30
2. Master in Computer application (M.C.A.)	College of Engineering, Trivandrum T.K.M. College of Engineering, Quilon	30

Degree Courses—

1. Civil Engineering	All Seven Engineering Colleges	602
2. Mechanical Engineering	All Seven Engineering Colleges	582
3. Electrical and Electronics Engineering	All seven Engineering Colleges	550
4. Computer Science	College of Engineering, Trivandrum	30

APPENDIX 6—(cont.)

<i>Courses offered</i>	<i>Institute where offered</i>	<i>Intake</i>
(1)	(2)	(3)
	Engineering College, Trichur	30
	T. K. M. College of Engineering, Quilon	30
	Regional Engineering College, Calicut	30
5. Chemical Engineering	Engineering College, Trichur	50
	T. K. M. College of Engineering, Quilon	30
6. Electronics and Communication	All Seven Engineering Colleges	300
7. Architecture	College of Engineering, Trivandrum	30
	T. K. M. College of Engineering, Quilon	20
	Regional Engineering College, Calicut	30
8. Applied Electronics and Instrumentation Engineering	College of Engineering, Trivandrum	40
9. Production-cum-plant Engineering	Engineering College, Trichur	30
10. Production Engineering	T. K. M. College of Engineering, Quilon	30
11. Production and Management	Regional Engineering College, Calicut	30
12. Industrial Engineering	College of Engineering, Trivandrum	20
13. Instrumentation and Control Engineering	N. S. S. College of Engineering, Palghat	30
Total		2494

I. *Part-time degree courses—*

1. Civil Engineering	College of Engineering, Trivandrum	20
	Engineering College, Trichur	20
	T. K. M. College of Engineering, Quilon	15

APPENDIX 6—(cont.)

<i>Courses offered</i>	<i>Institute where offered</i>	<i>Intake</i>
(1)	(2)	(3)
2. Mechanical Engineering	College of Engineering, Trivandrum	20
	Engineering College, Trichur	20
	T.K.M. College of Engineering, Quilon	15
3. Electrical and Electronics Engineering	College of Engineering, Trivandrum	20
	Engineering College, Trichur	20
	T.K.M. College of Engineering, Quilon	15
4. Electronics and Com- munication Engineer- ing	College of Engineering, Trivandrum	20
5. Chemical Engineering	Engineering College, Trichur	15
Total		200
<i>II. Post Diploma Courses—</i>		
1. Industrial Engineering	Central Polytechnic, Trivandrum	10
2. Television Engineering	Central Polytechnic, Trivandrum	10
3. Refrigeration and Air Conditioning	Government Polytechnic, Kalamassery	10
4. Foundry Engineering	M.T.I., Trichur	10
5. Computer Application	Central Polytechnic, Trivandrum	30
6. Industrial Safety Engineer- ing	Supervisory Develop- ment Centre, Kalamassery	25
Total		95
<i>III. Diploma Courses—</i>		
1. Civil Engineering	All Polytechnics except Government Poly- technic, Palai and all Women's Polytechnics	853

APPENDIX 6—(cont.)

<i>Courses offered</i> (1)	<i>Institute where offered</i> (2)	<i>Intake</i> (3)
2. Mechanical Engineering	All Polytechnics except Government Polytechnics, Palai and Vennikulam and all Women's Polytechnics	843
3. Electrical Engineering	All Polytechnics except Government Polytechnics, Palghat, Palai, Vennikulam, S. N. Polytechnic, Kanhangad and all Women's Polytechnics	713
4. Electronics	Central Polytechnic, Trivandrum	50
	Government Polytechnic, Palghat	30
	Government Polytechnic, Kothamangalam	25
	Government Polytechnic, Palai	15
	Government Polytechnic, Vennikulam	15
	S. S. M. Polytechnic, Tirur	55
	Women's Polytechnic, Trichur	45
	Women's Polytechnic, Calicut	30
	Government Polytechnic, Kottayam	30
	Government Polytechnic, Perinthalmanna	30
	Government Polytechnic, Cannanore	30
	Institute of Printing Technology, Shoranur	30

APPENDIX 6—(cont.)

<i>Courses offered</i>	<i>Institute where offered</i>	<i>Intake</i>
(1)	(2)	(3)
5. Automobile	Government Polytechnic, Kottayam	30
	Women's Polytechnic, Ernakulam	30
	Government Polytechnic, Kalamassery	50
	S. S. M. Polytechnic, Tirur	33
	S. N. Polytechnic, Kanhangad	45
	Government Polytechnic, Vennikulam	20
6. Wood Technology	Government Polytechnic, Cannanore	15
7. Textile Technology	Central Polytechnic, Trivandrum	30
	Government Polytechnic, Cannanore	30
8. Polymer Technology	Government Polytechnic, Kottayam	30
9. Instrument Technology	Government Polytechnic, Palghat	30
	Government Polytechnic, Palai	15
	Women's Polytechnic, Trivandrum	15
10. Chemical Engineering Technology	Government Polytechnic, Calicut	30
	Government Polytechnic, Kalamassery	30
11. Tool and Die Engineering	Kerala Government Polytechnic, Calicut	15
12. Architecture	Women's Polytechnic, Ernakulam	15
13. Printing Technology	Institute of Printing Technology, Shoranur	60
14. Commercial Practice	Women's Polytechnics	165
15. Costume Design and Dress making	All Women's Polytechnics, except Women's Polytechnic, Ernakulam	90

APPENDIX 6—(cont.)

<i>Courses offered</i>	<i>Institute where offered</i>	<i>Intake</i>
(1)	(2)	(3)
16. Computer Science, Technology	Government Polytechnic, Kalamassery Kerala Government Polytechnic, Calicut Government Polytechnic, Palai Women's Polytechnic, Trichur	15 15 15 15
Total		3602
<i>IV. Diploma Courses (Part-time)—</i>		
1. Civil Engineering	Central Polytechnic, Trivandrum Government Polytechnic, Kalamassery M.T.I., Trichur Kerala Government Polytechnic, Calicut	30 25 20 20
2. Mechanical Engineering	Central Polytechnic, Trivandrum Government Polytechnic, Kalamassery M.T.I., Trichur Kerala Government Polytechnic, Calicut	30 25 20 20
3. Electrical Engineering	Central Polytechnic, Trivandrum Government Polytechnic, Kalamassery M.T.I., Trichur Kerala Government Polytechnic, Calicut	30 25 20 20
Total		285
<i>V. Certificate Courses in Textile Technology—</i>		
1. Textile Technology	Central Polytechnic, Trivandrum Government Polytechnic, Cannanore	30 30
Total		60

APPENDIX 6—(cont.)

<i>Courses offered</i>	<i>Institute where offered</i>	<i>Intake</i>
(1)	(2)	(3)
<i>VI. College of Fine Arts—Degree Courses in Fine Arts—</i>		
1. Painting	} College of Fine Arts, Trivandrum	30 each
2. Sculpture		
3. Applied Art		
<i>VII. Fine Arts Institutions—</i>		
1. Drawing and Painting	} Ravi Varma Institute of Fine Arts, Maveli- kara and Institute of Fine Arts, Trichur	60
2. Sculpture and Modelling		
3. Commercial Art		
<i>VIII. Food Craft Institutes and Extension Centres—</i>		
1. Craftsmanship in Crockery	Food Craft Institute at Kalamassery and Extension Centres at Trivandrum, Kot- tayam and Calicut	4
2. Bakery and Confectionary	Food Craft Institute, Kalamassery	..
3. Canning and Food Pre- servation Craftsmanship	Food Craft Institute, Kalamassery	15
4. Hotel Reception, Book keeping and Type- writing	Food Craft Institute, Kalamassery and all Food Craft Institute Extension Centres	40
5. Restaurant and Counter	Food Craft Institute, Kalamassery, Extension Centres at Tri- vandrum, Kottayam, Calicut and Extension Unit at Kotha- mangalam	40
6. House-keeping	Food Craft Institute, Kalamassery	..
7. Industrial/Institutional Food Service Manage- ment	Food Craft Institute, Kalamassery	..

APPENDIX 6—(cont.)

<i>Courses offered</i> (1)	<i>Institute where offered</i> (2)	<i>Intake</i> (3)
<i>IX. Short-term Courses—</i>		
1. Cookery	Food Craft Institute, Kalamassery, Extension Centres, Calicut and Trivandrum	40
2. Bakery and Confectionary	Food Craft Institute, Kalamassery	20
3. Canning and Food Preservation	Food Craft Institute, Kalamassery	19
<i>X. Commercial Institutions—</i>		
1. Diploma in Typewriting and Shorthand	All Commercial Institutions	60 (in each)
2. Furniture Technology	Technical High Schools, Cannanore	..
3. Surface Finishing Technology	Technical High School, Badagara	..
4. Forging	Technical High School, Shoranur	..
<i>XI. Tailoring, Garment Making Centres/Schools and Vocational Training Centres—</i>		
<i>Two Year Courses—</i>		
1. Book Binding	Book Binding Centre, Palkulangara and Kulathur	60
2. Rattan	Rattan Training Centre, Paraniyam	15
3. Composing and Printing	Composing and Printing Centre, Vattiyoor-kavu	30
4. Weaving	Weaving Training Centre, Aralummood	15
5. Tailoring and Embroidery	Government Industrial School, Iringalakuda and Vadakanchery	40
<i>One Year Courses—</i>		
1. Tailoring and Garment Making	All Tailoring and Garment Making Centres, J.T.S. and T.T.C.	20 and each

APPENDIX 7
District-wise distribution of Technical Institutions

Category	Trivandrum	Quilon	Alleppey	Pathanamthitta	Kottayam	Idukki	Ernakulam	Trichur
1	2	3	4	5	6	7	8	9
Engineering Colleges	1	1	..	..	..	..	1	1
Polytechnics	1	1	1	2	2	1	2	3
Women's Polytechnics	1	..	..	..	..	..	1	1
Institute of Printing Technology	..	..	..	..	1	..	..	..
Food Craft Institute	1	..	..	..	1	..	2	1
College of Fine Arts	1	..	..	..	..	..	..	..
Institute of Fine Arts	..	..	1	..	..	..	..	1
Commercial Institutes	1	1	1	..	2	1	3	1
Technical High Schools	4	2	4	1	6	3	5	4
Pre-Vocational Training Centres	2	1	2	1	2	..	1	3
Vocational Training Centres	5	..	..	..	..	..	..	..
Tailoring Training Centres	6	..	1	..	..	..	..	..
Tailoring Trade Schools	..	..	1	..	..	1	..	..
Industrial Schools	..	..	..	..	..	..	..	2
Tailoring and Garment Making Training Centres	1	2	..	..	2	4	3	3
T.T.T. Extension Centre	..	..	..	..	..	..	1	..
Supervisory Development Centre	..	..	..	..	..	..	1	..
Total	24	8	11	4	15	10	20	20

APPENDIX 7—(cont.)

Category	Falghat	Malappuram	Calicut	Wynad	Cannanore	Kasaragod	Total	Of which New
	10	11	12	13	14	15	16	17
Engineering Colleges	1	..	1	..	1	..	7	1
Polytechnics	1	2	1	1	1	1	20	..
Women's Polytechnics	..	..	1	..	..	..	4	..
Institute of Printing Technology	1	..	..	..	..	..	1	..
Food Craft Institute	..	..	1	..	1	..	7	3
College of Fine Arts	..	..	..	..	..	..	1	..
Institute of Fine Arts	..	..	..	..	..	..	2	..
Commercial Institutes	1	1	2	1	2	..	17	..
Technical High Schools	3	4	3	2	4	2	47	3
Pre-Vocational Training Centres	2	1	1	..	2	1	19	..
Vocational Training Centres	..	..	..	..	..	..	5	..
Tailoring Training Centres	..	..	..	..	..	..	7	..
Tailoring Trade Schools	..	..	..	..	..	..	2	..
Industrial Schools	..	..	2	..	..	..	2	..
Tailoring and Garment Making Training Centres	3	5	2	3	2	1	31	..
T.T.,T. Extension Centre	..	..	..	..	..	..	1	..
Supervisory Development Centre	..	..	..	..	..	..	1	..
Total	12	13	12	7	13	5	174	7

APPENDIX 8

Number of institutions under the Department of
Technical Education

Sl. No.	Category	Management			Total
		Government	Private	Quasi Government	
(1)	(2)	(3)	(4)	(5)	(6)
1.	Engineering Colleges	.. 3	3	1	7
2.	Polytechnics	.. 14	6	..	20
3.	Women's Polytechnics	.. 4	..	..	4
4.	Institute of Printing Technology	.. 1	..	..	1
5.	Food Craft Institute and Extension Centre		.	7	7
6.	College of Fine Arts	.. 1	.	..	1
7.	Institute of Fine Arts	.. 2	..	..	2
8.	Commercial Institutions	.. 17	..	..	17
9.	Technical High Schools	.. 47	..	..	47
10.	Pre-Vocational Training Centres	.. 19	..	..	19
11.	Government Industrial Schools	.. 2	..	..	2
12.	Vocational Training Centre	.. 5	..	..	5
13.	Tailoring Training Centres	.. 7	..	..	7
14.	T.G.M.T. Centres	.. 31	..	..	31
15.	Tailoring Trade Schools	.. 2	..	..	2
16.	Technical Teachers' Training Extension Centre		..	1	1
17.	Supervisory Development Centre	.. 1	..	..	1
18.	Others		..	3	3
					(Autonomous institutions)
Total		.. 156	9	12	177

APPENDIX 9

Hostel Facilities 1986-87

<i>Sl. No.</i>	<i>Name of institution</i>	<i>No. of hostel blocks</i>	<i>Intake sanctioned</i>
(1)	(2)	(3)	(4)
<i>Engineering Colleges—</i>			
1.	College of Engineering, Trivandrum ..	5	690
2.	Engineering College, Trichur ..	5	449
3.	T.K.M. College of Engineering, Quilon ..	2	400
4.	N.S.S. College of Engineering, Palghat ..	4	579
5.	M.A. College of Engineering, Kotha- mangalam ..	3	340
6.	Regional Engineering College, Calicut ..	7	1295
<i>Polytechnics—</i>			
1.	Central Polytechnic, Trivandrum ..	1	180
2.	Government Polytechnic, Kottayam ..	2	100
3.	Do. Kalamassery ..	2	264
4.	Do. Perinthalmanna ..	1	180
5.	Do. Calicut ..	2	280
6.	Do. Cannanore ..	2	280
7.	Do. Muttom ..	..	..
8.	Do. Meenangadi ..	..	..
9.	Do. Vennikulam ..	..	..
10.	Do. Palghat ..	..	..
11.	Do. Kothamangalam ..	..	..
12.	Do. Palai ..	..	..
13.	Institute of Printing Technology, Shornur ..	..	..
14.	Sree Rama Polytechnic, Valapad ..	..	..
15.	Maharaja Technological Institute, Trichur ..	1	108
16.	S.N. Polytechnic, Kottayam ..	1	..
17.	N.S.S. Polytechnic, Pandalam ..	1	104
18.	Carmal Polytechnic, Alleppey ..	1	120

APPENDIX 9—(cont.)

<i>Sl. No.</i>	<i>Name of institution</i>	<i>No. of hostel blocks</i>	<i>Intake sanctioned</i>
(1)	(2)	(3)	(4)
19.	Thiagarajar Polytechnic, Algappanagar ..	2	200
20.	S.S.M. Polytechnic, Tirur ..	1	175
21.	S.N. Polytechnic, Kanhangad ..	..	..
<i>Women's Polytechnics—</i>			
1.	Women's Polytechnic, Trivandrum ..	1	36
2.	Do. Ernakulam ...	..	..
3.	Do. Calicut ..	1	80
4.	Do. Trichur ..	1	80
<i>Technical High School—</i>			
1.	Technical High School, Cheruvathur ..	1	40

APPENDIX 10
Scholarship and stipend during 1987-88

Serial number	Category of institution	No. of institution	Scholarship		Stipend	
			No. of students	Amount Rs. in lakhs	No. of students	Amount Rs. in lakhs
1	2	3	4	5	6	7
1	Government Engineering Colleges ..	3	1061	25.67	439	5.50
2	Private Engineering Colleges ..	3	250	10.93	1440	21.43
3	Government Polytechnics ..	15	44	0.54	2000	11.35
4	Private Polytechnics ..	6	402	5.70	1453	8.56
5	Technical High Schools ..	47	634	0.98	1715	7.30
6	College of Fine Arts and Fine Arts Institute ..	3	1	0.01	64	0.30
7	Pre-Vocational Training Centre ..	10	136	0.14	120	0.51
8	Food Craft Institutes ..	7	5	0.01	119	0.51
9	Government Commercial Institutes ..	17	..	..	62	0.54
10	Tailoring and Garment Making Training Centre ..	35	..	..	65	0.52
11	Vocational Training Centre ..	12	..	..	30	0.20