LIST OF FIGURES

<table>
<thead>
<tr>
<th>List</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Computer Application Spectrum</td>
<td>5</td>
</tr>
<tr>
<td>2. Polytechnic Vs. Computers</td>
<td>83</td>
</tr>
<tr>
<td>3. Number of polytechnic Vs. Years</td>
<td>87(i)</td>
</tr>
<tr>
<td>4. General requirements in computer technician education</td>
<td>96(ii)</td>
</tr>
<tr>
<td>5. Existing curriculum model</td>
<td>117</td>
</tr>
<tr>
<td>6. Proposed model</td>
<td>121(i)</td>
</tr>
</tbody>
</table>

LIST OF TABLES

<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Placements</td>
<td>16</td>
</tr>
<tr>
<td>2. Job / career description –i</td>
<td>68</td>
</tr>
<tr>
<td>3. Job / career description – ii</td>
<td>69</td>
</tr>
<tr>
<td>4. Job / career description – iii</td>
<td>76</td>
</tr>
<tr>
<td>5. Hardware access in polytechnics</td>
<td>82</td>
</tr>
<tr>
<td>6. Location of computers</td>
<td>83</td>
</tr>
<tr>
<td>7. Access time of computers</td>
<td>83</td>
</tr>
<tr>
<td>8. Types of software available</td>
<td>84</td>
</tr>
<tr>
<td>9. Courses conducted by TTTI, Chennai</td>
<td>85</td>
</tr>
<tr>
<td>10. Number of programmes available in Kerala</td>
<td>86</td>
</tr>
<tr>
<td>11. Polytechnics, programmes and intake(year-wise)</td>
<td>86</td>
</tr>
<tr>
<td>12. Post-diploma programmes</td>
<td>86</td>
</tr>
<tr>
<td>13. Polytechnics existing year-wise</td>
<td>87</td>
</tr>
<tr>
<td>14. Out-turn of technicians</td>
<td>87</td>
</tr>
<tr>
<td>15. Absorption of students in two years</td>
<td>87</td>
</tr>
<tr>
<td>16. Status of polytechnics</td>
<td>88</td>
</tr>
<tr>
<td>17. Students employment</td>
<td>88</td>
</tr>
<tr>
<td>18. Size of unemployment</td>
<td>88</td>
</tr>
<tr>
<td>19. Status of manpower in diploma and post-diploma</td>
<td>89</td>
</tr>
</tbody>
</table>

(v)
INTRODUCTION

1.0
1.1 General
1.2 Need of the problem
1.3 Problem statement
1.4 Computer application spectrum
1.5 Educational system
  1.5.1 IT in technician education
  1.5.2 Educational aspects
  1.5.3 Educational questions
    1.5.3.1 Curricula of diploma and post-diploma programmes
    1.5.3.2 Learning
    1.5.3.3 Educational administration
  1.5.4 Educational issues
  1.5.5 Educational consequences
    1.5.5.1 Computer curriculum process
    1.5.5.2 Staff development
    1.5.5.3 Infra-structure facilities
    1.5.5.4 Industry-Institute-Interaction
    1.5.5.5 Instructional materials with media and Methods
    1.5.5.6 Placement opportunities
  1.5.6 Educational practices
  1.5.6.1 Suggestion for curriculum preparation
1.6 Objectives
1.7 Hypotheses

LITERATURE REVIEW

2.0
2.1 Status of computer education in various countries
2.2 Computer training available in various institutes
2.3 Need of the standard
2.4 IT training in the new world
2.5 New ways of learning-a survey
2.6 Rapid expansion of the technology (State-of-the-art technology)
2.7 Developments of hardware and software in computers
2.8 Survey of the equipment due to rapid changes
2.9 Survey of the skills due to changes-Job description
2.10 M I S or Use of computers in administration
3.0 METHODOLOGY
3.1 Research design 79
3.2 Tools / Instruments 79
3.3 Methodology 79
3.4 Assumption 81
3.5 Data collection 81
3.6 Population, sample 82
3.7 Observations, findings 82
3.8 Findings 90
3.9 Data analysis 93

4.0 ANALYSIS, RECOMMENDATIONS AND CONCLUSIONS 96
4.1 Educating the Technician 96
4.2 General requirements of technician 97
4.3 Deficiencies and suggestion, SWOT analysis 98
4.4 Analysis of the curricula of various programmes 101
4.5 Existing model 117
4.6 Proposed model of the curriculum design and development 119
4.7 Suggestions for improvement 127
4.8 Planning and implementing staff development programmes 135
4.9 Proposed strategies 136
4.10 Conclusion 139 (vii)

BIBLIOGRAPHY 140

APPENDIX: 1. Scheme of Computer Engineering 144
2. List of polytechnics offering Computer Engineering 145
3. Scheme of Computer Hardware and Maintenance 146
4. List of polytechnics offering CHM 149
5. Scheme of Computer Applications and Business Administration 150
6. List of polytechnics offering CABA 153
7. Scheme of Commercial Practice 154
8. List of polytechnic offering CP 157
9. Scheme of Information Technology 158
10. List of polytechnics offering IT 161
11. Scheme of Computer Aided Design (Post-Diploma) 162
12. Scheme of Computer Application (Post-Diploma) 163
13. Scheme of B.Sc(Computer Science) 164
14. Scheme of MCA programme 165
15. Scheme of PGDCA programme 166
16. Questionnaire to the Principals of polytechnics 168
17. Questionnaire to Industry 173
18. Questionnaire to Alumni 175
19. Questionnaire to Heads of sections and other staff  
20. Status of training in Polytechnics of Kerala  
21. Role of polytechnics in IT related jobs in south  
22. Computer Assisted Instruction  
23. Psychology of Training and development