## CONTENTS

### CHAPTER - I

**INTRODUCTION**

Historical background

<table>
<thead>
<tr>
<th>Title and meaning of the terms</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Observational concept of intelligence</td>
<td>1</td>
</tr>
<tr>
<td>(ii) Biological concept of intelligence</td>
<td>5</td>
</tr>
<tr>
<td>(iii) Physiological concept</td>
<td>7</td>
</tr>
<tr>
<td>(iv) Individual psychology</td>
<td>10</td>
</tr>
</tbody>
</table>

**FACTORIAL PICTURE**

| (a) Intelligence | 18 |
| (b) Educational Attainment | 30 |
| (c) Development of intelligence and attainment during adolescence | 32 |

Variation of Intelligence and Attainment due to environmental and hereditary factors | 38 |

Previous Researches | 47 |

Methods and Test used | 66 |

### CHAPTER - II

(A) Design of the investigation | 71 |

(B) Sampling | 73 |

(C) Normalizations of Raw Scores | 51 |

### CHAPTER - III

Description of the ability test.

1. Ability Tests as a measure of intelligence | 97 |
1.1 Ray-Chowdhury's Aligarh V.I.T. ....... 98
1.2 Vernon's Non-Verbal (g Tests) ..........102
1.3 Vernon's Pattern Drawing Tests .......105
1.4 Vernon's Pattern Reproduction Test ....109
1.5 Vernon's Graded Arithmetic, Mathematics Tests 
1.6 Raven's Progressive Matrices ..........116
1.7 Lovell's hidden Gottschaldt shapes ....123
1.8 Trist-Hargreaves Concept-formation ....126 Tests
1.9 Lovell's Concept-formation Test .......130
2. Vernon-Ray-Chowdhury's General Knowledge Tests .................134

CHAPTER - IV

Statistical analysis of the data.
1. Reliability and Validity of ability Test..137
   1.1 Reliability ............ 137
   1.2 Validity ............. 143
   1.3 The Study of the Overlapping .... 157
2. Centroid method
   2.a-(i) Extraction of the factors ........ 155
   (ii)Total variances of the tests .... 163
   (iii)Rotation of the orthogonal reference areas ........ 165
CHAPTER - V

Variation of intelligence and attainment with Age, Sex, Locality and Training Courses:

1. Statistical methods followed ..... 167
   Training Courses with reference to intelligence and attainment tests ... 168

2. Interpretation of the results obtained by Fisher's differential "t" Technique used in the previous section ..... 217

CHAPTER - VI

Summary of Conclusions .................. 280

References .................. 302