Contribution of Different Tests in Selection

K.P. Garg

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Foreword

The Centre for Policy Research has been utilising the data collected through selection examinations for conducting research studies to improve selection procedures and also to influence policies positively in this regard. Some of these relate to post examination analysis of the performance of candidates and their background while other relates to the behaviour of tests and other technical issues.

The present report is an outcome of yet another effort in this direction. It deals with post examination analysis of the performance of the candidates in an examination conducted for the selection of candidates for the posts of Assistant Administrative Officers in Life Insurance Corporation of India by the CPR in the year 2009. The effort has been made in this report to describe the quality of the tests used in this examination and performance of the candidates in the examination and individual tests *vis-a-vis* certain general characteristics of the candidates.

I hope, the readers of report, especially the persons from Life Insurance Corporation of India and those who have a concern for personnel selection, and test development for this purpose will find it useful.

I wish to record my appreciation of the effort put in by Dr. K.P. Garg, Consultant, ET& PPR Unit in the CPR to bring out the study in the present form.

Centre for Policy Research   **Dr. Pratap Bhanu Mehta**
New Delhi   **President**
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About the Author

Dr. Garg holds a Master degree in Statistics and Doctoral degree in Education. Before joining CPR, he was Senior Faculty Member at the N.C.E.R.T. While at the N.C.E.R.T. his main area of interest being identification and follow-up of National Talent, and Measurement & Evaluation in Education. Besides, he was associated with many major research projects of N.C.E.R.T.

He devised the mental faculty of 'Reasoning' into 37 dimensions and developed tests to measure each of those dimesnsions. He is credited with finding out the Structure of Reasoning Abilities in various nurturance groups.

He devised the blue print of the Mental Ability Test used for selection of students for admission to Jawahar Navodaya Vidyalaya in the country for the first time beside development of the test. He was incharge of Jawahar Navodaya Vidyalaya Cell in the N.C.E.R.T. for many years. The cell was responsible for conduct of selection tests all over the country for these vidyalayas.

Besides other publications, he wrote a book, "Development of Reasoning during School Education". It was published by Concept Publications, New Delhi.

Dr. Garg has conducted various national and regional level workshops for writing the items for the Mental Ability Tests.

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My grateful thanks are due to Prof. Pratap Bhanu Mehta, President, CPR, without whose concern for research, especially in Personnel Selection, this study would not have been possible. I am also grateful to Shri L. Ravi, Chief, Administrative Services who provided impetus to complete the study. My colleagues in the ET & PPR Unit viz. Shri Jag Mohan who was always willing to read out the draft and Shri Dinesh Chandra who was always willing to provide necessary material and information in this connection deserve appreciation and thanks. Shri Ajay Nayyar and Shri Vijender Tanwar from Computer Unit of the CPR need special mention as without their sincere participation in data processing, the present work would not have been possible. Special mention here also has to be made of Shri Rudra Narayan from NCERT who helped in statistical analysis of the data.

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Chapter 1

Introduction

The Centre for Policy Research has, during the previous years conducted a number of examinations for assisting various public undertakings in finding suitable candidates to fill in posts both at the clerical and officers' level. The Centre also conducted entrance examinations for various universities/institutes for admission to different courses. In most of these examinations there is a mix of objective and subjective tests. These tests are used to determine which person can perform most efficiently and accurately and would be likely to contribute most to the development of his/her organisation or would benefit most from a course of study or training.

Life Insurance Corporation of India intended to appoint 400 Assistant Administrative Officers (Generalists). It gave an advertisement for this purpose in Employment News dated 21-22 March, 2009. The task for selection of candidates was assigned to the Centre for Policy Research. Studies conducted over a period of time have revealed that tests of mental abilities and aptitudes have high correlation with the future performance and success of a candidate on a job. It is expected that a person working as Assistant Administrative Officer in LIC or other similar organization should possess an above average intelligence requiring :

1. reasoning and analytical ability to carry out various tasks assigned.
2. comprehensive numerical ability for the day-to-day work and calculations.
3. general awareness and awareness of day-to-day happenings to carry out as an officer and to assume higher responsibility.
4. proficiency and comprehension in written and spoken expression in English language.

Hence in order to carry out the task for selection of candidates for the posts, it was decided to develop a test to assess the reasoning ability of the candidates, a test to assess their numerical ability, a test to assess their general knowledge and awareness of current affairs, and a test to assess their proficiency and comprehension in English Language.

The task of developing these tests was assigned to highly experienced and senior persons having more than 30 years of experience in the development of tests in their respective areas. Thus, tests so designed were administered to the candidates who applied for the posts, in an examination conducted on Sunday dated 07.06.2009. These were:

Test 1   :   Resoning Ability Test
Test 2   :   Numerical Ability Test
Test 3   :   General Knowledge and Awareness of Current Affairs Test
Test 4   :   Proficiency in English Language Test

All these tests were of objective nature and their items/questions were of multiple options type. There were 60 questions in Reasoning Ability Test, 30 questions in Numerical Ability Test, 20 questions in General Knowledge and Awareness of Current Affairs Test and 30 questions in English Language Test. Duration of these tests was two hours. Once these tests were over a descriptive test in English Language of one hour duration , was also given to the candidates. This test consisted of Precis Writing, Comprehension and Essay Writing and it was of qualifying nature. The examination was conducted at 37 examination centres spread all over India.

Any programme of selection is not complete till the selection tools or the tests used for this purpose, are studied in details of their efficacy for selection and the way candidates performed on them. Because the very purpose of holding an examination or test is to find out the differences amongst the candidates / examinees who appear for it with respect to the ability/aptitude or trait being measured. It paves the way for further improvement/refinement of the selection tool and knowledge builtup in the related measurement area. Besides, it is a known fact that differences amongst the individuals with respect to different aptitudes, abilities and/or traits are due to differences in their socio-cultural, economic backgrounds and upbringing and not due to trait/ aptitude or ability being measured alone. Though an effort was made to develop as far as possible culturally neutral tests for the present selection yet this issue was creeping in the mind of the invetsigator as to how far the differences in the performance of the candidates were due to differences in their certain general characteristics. He, therefore, took the investigation titled as :

"An Investigation into the Performance of the Candidates in the Examination Conducted for Selection to the Posts of AAOs in LIC *vis-a-vis* Certain General Characteristics"

The objective of the investigation were:

1. To find out as to how efficiently the examination and different tests used for the purpose, discriminated the candidates on the abilities/aptitude measured
2. To compare the performance of the candidates belonging to different categories i.e. General, OBC, SC and ST in the examination and different tests.
3. To compare the performance of the male and female candidates in the examination and different tests
4. To compare the performance of married and unmarried candidates in the examination and different tests.

5. To compare the performance of the candidates belonging to different age groups, viz. 25 years and below, 26-30 years, 31-35 years, and 36 years and above in the examination and different tests.

Subjects of the Investigation

The subjects of the investigation were the candidates who appeared in the written examination conducted by CPR for selection to the post of Assistant Administrative Officer in Life Insurance Corporation of India in the year 2009.

Methods or Statistical Techniques used for invetsigation

Frequency distributions of scores, cumulative and percentage cumulative frequency distributions, means, standard deviations, Fisher's Z values for the significance of differences between means, percentile scores and bar diagrams.

Results of the invetsigation are being reported in the Chapters to follow.

Chapter 2

Performance of the Candidates in the Examination

There were about 400 vacant posts of Assistant Administrative Officers (Generalists) in the Life Insurance Corporation of India. 1,64,608 candidates appeared in the examination conducted by the CPR on June 7, 2009 at various centres all over the country for selection to these posts. On the basis of total scores obtained by the candidates in a test of Reasoning Ability, a test of Nummerical Ability, a test of General Knowledge and Current Affairs and a test of English Language, a merit list was prepared. On the basis of this merit list candidates were selected for interview. However, a candidate who had a score of 25 or less in Reasoning Ability Test, a score of 13 or less in Numerical Ability Test, a score of 9 or less in General Knowledge and Current Affairs Test, and a score of 13 or less in English Language Test was considered as disqualified. The cut off score in each (objective) test was 40% of the maximum score of the test for all candidates. In addition to it, a candidate from the General or OBC category who could not get 50% or 25 marks in the Descriptive Test, was excluded from the merit list. Similarly, a candidate from the SC and ST category who could not get 40% or 20 marks in the Descriptive Test, was not eligible to be included in the merit list. The frequency distribution of the total scores of the candidates in the Examination is given below in Table 1. The cumulative frequencies and percentage cumulative frequencies are also given in Table-1.

Table 1

Frequency Distribution of Total Scores of the Candidates in the Examination

(1) Class Interval	(2) Frequency	(3) Cum. Frequency	(4) % Cum. Frequency
0-5	112	113	0.07
6-10	168	281	0.17
11-15	738	1019	0.62
16-20	2344	3363	2.04
21-25	5244	8607	5.23
26-30	10365	18972	11.53
31-35	10981	37273	22.64

(Contd. on next page)

(1) Class Interval	(2) Frequency	(3) Cum. Frequency	(4) % Cum. Frequency
36-40	25636	62909	38.22
41-45	27689	90598	55.04
46-50	24241	114839	69.77
51-55	18419	133258	80.95
56-60	5864	146118	88.77
61-65	8510	154636	93.94
66-70	5173	159809	97.08
71-75	2727	162536	98.74
76-80	1262	163798	99.51
81-85	549	164347	99.84
86-90	198	164545	99.96
91-95	46	164591	99.99
96-100	13	164604	100.00
101-105	4	164608	100.00
106-110	0	164608	100.00
111-115	0	164608	100.00
116-120	0	164608	100.00
121-125	0	164608	100.00
126-130	0	164608	100.00
131-135	0	164608	100.00
136-140	0	164608	100.00

Mean   =   44.64
Median   =   42.60
S.D.   =   12.64

It was observed from the above table that though the maximum score that could be obtained by a candidate in the examination was 140 yet none of the candidates could score beyond a score of 105. Thus, there was a loss of 25% of the score range and the examination or the tests in toto were found to be very difficult by the candidates. As only 400 vacancies for the posts were announced by the organization against which 1,64,608 candidates appeared in the examination, the selection ratio was only 243 candidates per thousand. Hence in a high order of selection like this, loss of 25% of the score range in the upper tail of distribution is justified.

Further, the mean score in case of the above distribution was 44.64 which was 31.89% of the maximum score that could be obtained and 42.51% of the obtained maximum score. Therefore, on the whole the examination or the tests were very difficult but within the available range of abilities of the candidates, they were little less than moderately difficult - signifying discrimination among the candidates along the range of their abilities. The median=42.60 for the above distribution was lower than the mean score which indicated that the distribution of total scores was positively skewed for the ability range of the candidates.

The significance of any score is ordinarily, its usefullness in placement of a candidate somewhere in the group. The greater the variance among the scores, more accurately (usually) each person is placed in the group. The usual and most accepted interpretation for this is in terms of the percentages of cases included within the range from one standard deviation below the mean to one standard deviation above the mean. Further, in a normal distribution, it is known that from -1σ (one standard deviation below the mean) to +1σ (one standard deviation above), exactly 68.26 percent cases are found. However, since most samples yield distributions that depart to some degree from normality, we say "about two-thirds" which is, of course, a little short of 68.26 per cent. With two-thirds of the surface within those limits, there is left one-third of the area to be divided between two "tails" of the distribution. In case of the above distribution of scores standard deviation was 12.64. Therefore, the distance from -1σ to +1σ on the scale of measurement was 32 (44.64-12.64) to 57.28 (44.64+12.64). Within the limits from a score of 32 to 57.28, 68.54 percent of the candidates were placed. We may, therefore, say that nearly two-thirds of our candidates were placed within -1σ to +1σ limits. Hence, we may infer that the examination or the tests in total provided fair discrimination amongst the candidates.

Further, in a high level of selection (where majority of candidates are to be rejected) a test is so designed that majority of the candidates piled up below a certain score somewhere near the mean i.e. in the lower tail of the distribution and a small proportion in the upper tail of the distribution. Thus, the overall measure of individual differences in case of such tests is low but discrimination in the upper tail of the distribution is very high. We may notice from the percentage cumulative frequencies give in the above table that 55.04% of the candidates scored below a score of 45 which was very close to mean score and the rest i.e. 44.96% above it. Of those who scored above 45, 14.73% scored in between 46 and 50; 11.18% scored in between 51 and 55; 7.82% scored in between 56 and 60; 5.17% scored in between 61 and 65; 3.14% scored in between 66 and 70; 1.66% scored in between 71 and 75; 0.77% scored in between 76 and 80; 0.33% scored in between 81 and 85; 0.12% scored in between 86 and 90; 0.03% in between 91 and 95, and only 0.01% scored in between 96 and 100. This indicated that the proportion of candidates scoring one class interval above the mean went on decreasing from one class interval to another till the last interval, indicating thereby better and better discrimination among the candidates of high order of brightness. Thus, the examination or the tests in total were found to be very good discriminators amongst the more able candidates with respect to abilities tested. Next we discuss each of our tests starting with the test of Reasoning Ability.

Performance in Reasoning Ability Test

The test of Reasoning Ability had 60 items. These constituted various mental tasks which involved reasoning, such as, analogies or relations wherein candidates had to identify the relations or similarities between the items of information; classes or groups having similar characteristics wherein candidates had to find out the class or group not having those characteristics as in odd-

man-out type of items; systems or series, in which items of information followed some order or rule and in order to find out the solutions to the problems, candidates had to identify the order or the rule involved in the items of information; transformations or changes in the given items of information as in the problems concerned with coding-decoding, jumbled letters, redefinition of arithmetical operations and orientation of directions etc.; logical comprehension of practical situations, expectations and implications or logical deductions as in the problems where candidates had to access the given propositions or premises in order to deduce or find out the assumptions implied by them; and solution of problems based on conditional selection.

The frequency distribution of scores of the candidates in Reasoning Ability Test is given below in Table 2. The cumulative frequencies and percentage cumulative frequencies may also be found in this table.

Table 2

**Frequency Distribution of Scores of the Candidates in
Reasoning Ability Test**

(1) Class interval	(2) Frequency	(3) Cum. Frequency	(4) % Cum. Frequency
0-3	454	454	0.28
4-6	1492	1946	1.18
7-9	5001	6947	4.22
10-12	11759	18706	11.36
13-15	21852	40558	24.64
16-18	31457	72015	43.75
19-21	33361	105376	64.02
22-24	27220	132596	80.55
25-27	17658	150254	91.28
28-30	8919	159173	96.70
31-33	3767	162940	98.99
34-36	1295	164235	99.77
37-39	317	164552	99.97
40-42	47	164599	99.99
43-45	8	164607	100.00
46-48	1	164608	100.00

(1) Class interval	(2) Frequency	(3) Cum. Frequency	(4) % Cum. Frequency
49-51	0	164608	100.00
52-54	0	164608	100.00
55-57	0	164608	100.00
58-60	0	164608	100.00

Mean   = 19.50
Median = 19.42
S.D.   =   5.91

It was observed from the above table that though the maximum score that could be obtained in Reasoning Ability Test was 60 yet none of the candidates obtained a score of 49 and above. Thus, there was a loss of 20% of the test's score range. The mean score=19.50 of the distribution was 33% of the maximum score that could be obtained and 41% of the obtained maximum score. This indicated that for the available range of the ability of the candidates, test of Reasoning Ability was more difficult as far as the average performance of the candidates on the test was concerned. The median score of the distribution was 19.42. As the difference between mean score and median score was only 0.08, we may consider the distribution of Reasoning Ability Test's scores deviating slightly from a symmetrical distribution .

We may further observe from the above table that the distance between -1σ to +1σ (σ=5.91) of the mean on the scale of measurement in case of the above distribution was 13.59 to 25.41 and within the limits from a score of 13.59 to 25.41, 64.40% of the candidates approximately scored on the Reasoning Ability Test. Thus, little less than two-third of the candidates were placed between -1σ to +1σ of the obtained mean and about one-third outside these limits. Therefore, we may conclude that though the test of Reasoning Ability was a very difficult test for the candidates yet within the ability range of the candidates, it provided fair discrimination amongst them.

Performance in Numerical Ability Test

The test of Numerical Ability had 30 items. They constituted problems on simplification, L.C.M., square root, average, ages, surds and indices, percentage, profit and loss, ratio & proportion, time & work, chain rule, train, boat & stream, simple and compound interest, area and volume, stock & shares, discount, etc. The frequency distribution of scores of the candidates in Numerical Ability Test is given in Table 3 below:

Table 3

Frequency Distribution of Scores of the Candidates in Numerical Ability Test

(1) Class interval	(2) Frequency	(3) Cum. Frequency	(4) % Cum. Frequency
0-3	18149	18149	11.02
4-6	36725	54874	33.34
7-9	49256	104130	63.26
10-12	31663	135793	82.49
13-15	15812	151605	92.10
16-18	7877	159482	96.89
19-21	3638	163120	99.10
22-24	1267	164387	99.87
25-27	210	164597	99.99
28-30	11	164608	100.00

Mean = 8.66
Median = 8.17
S.D. = 4.46

It may be observed from the the above table that the distribution of scores obtained by the candidates in Numerical Ability Test was positively skewed and there was no loss of test's score range. The mean score of the distribution was 8.66. This was 28.87% of the maximum score. Further, 63.26% of the candidates scored from a score of 0 to 9 while only 36.74% scored in a higher range of scores from 10 to 30. This indicated that the average difficulty level of the test was very high and majority of the candidates scored below a score of 9 which was close to the mean and only a small proportion of candidates in a higher range of scores above 9. Further, out of those who scored above 9, 19.23% had their scores between 10 to 12; 9.16% between 13 to 15; 4.79% between 16 to 18; 2.21% between 19 to 21; 0.69% between 22 to 24; 0.12% between 25 to 27; and only 0.01% had their scores between 28 to 30. Thus, as one moves along the higher tail of the distribution, he/she finds that proportion of candidates scoring in the class-intervals above the class interval to which mean belong went on decreasing till the last class-interval. This indicated very minute discrimination among the candidates of high order of ability above the average. We may, therefore, conclude that Numerical Ability Test was a very good test for screening and placement of the candidates with respect to the concerned ability.

Performance in General Knowledge and Awareness of Current Affairs Test

The General Knowledge and Current Affairs test had 20 items. They constituted knowledge of the judicial system, geography, Indian Polity, authors of the important books, sport events, names of the heads of countries, important dates, Constitution of India, abbreviation, Indian history, location of power project and plant, green revolution, countries and their capitals, heads of the committees, inventions etc.

The frequency distribution of scores of candidates in the General Knowledge and Awareness of Current Affairs Test is given in Table 4 below:

Table 4
Frequency Distribution of Scores of the Candidates in
General Knowledge and Awareness of Current Affairs Test

(1) Class interval	(2) Frequency	(3) Cum. Frequency	(4) % Cum. Frequency
0-3	30357	30357	18.44
4-6	73606	103963	63.16
7-9	46695	150658	91.53
10-12	12297	162955	99.00
13-15	1605	164560	99.97
16-18	48	164608	100.00
19-20	0	164608	100.00

Mean = 5.84
Median = 5.61
S.D. = 2.65

It was observed from the frequency distribution given in the above table that none of the candidates could score beyond 18 in General Knowldege and Current Affairs Test. Thus, there was loss of 10% of test's score range and the candidates' general knowledge and knowledge of current affairs was poor than as desired. The mean of the test was 5.84 which was 32.44% of the obtained maximum score. Thus, on the average, General Knowledge and Awareness of Current Affairs Test was difficult. Further, as indicated by the above distribution of scores, majority of candidates i.e. 63.16% scored between a score of 0 and 6 while only 36.84% scored between a higher range of scores from 7 to 18 i.e. above the mean. Thus, dispersion of the candidates along the higher tail of the distribution was high. Out of 36.84% who scored between 7 and 18, 28.37% scored between 7 to 9; 7.47% between 10 to 12; 0.97% between 13 to 15; and only 0.63% scored between 16 to 18. Thus, as we moved along the higher tail of the distribution above the mean, we noticed that proportions of candidates scoring between different class-intervals went on

decreasing from one class interval to another till the last class interval. This, further indicated that discrimination even among the candidates of the high order of the ability was very minute. We may, therefore, conclude that General Knowledge and Current Affairs Test was also a very good test for discrimination of the candidates in this respect.

Performance in English Language Test

The test of English Language had 30 items. These constituted finding out the wrong phrases, pairs of related words, synonyms, antonyms and sentence completion. The frequency distribution of scores of the candidates in English Language Test is given in Table 5 below:

Table 5
Frequency Distribution of Scores of the Candidates
in English Language Test

(1) Class interval	(2) Frequency	(3) Cum. Frequency	(4) % Cum. Frequency
0-3	7303	7303	4.44
4-6	20627	27930	16.97
7-9	42840	70770	42.99
10-12	40241	111011	67.44
13-15	25511	136522	82.94
16-18	14711	151233	91.87
19-21	8278	159511	96.90
22-24	3950	163461	99.30
25-27	1080	164541	99.96
28-30	67	164608	100.00

Mean = 10.92
Median = 10.32
S.D. = 4.91

It is evident from the frequency distribution given in the above table that full range of test's score was utilized by the candidates who appeared in the examination. The mean score of the test was 10.92 which was 35.4% of the maximum score. Hence on the average, the test was difficult one. It is further observed from the above table that the distribution of scores of the candidates in the test was positively skewed and though the standard deviation which is overall measure of individual differences amongst the candidates, was 4.91 yet dispersion of candidates beyond the class interval of 10 to 12 was very high. As 67.44% of the candidates piled up between a score of 0 to 12, 32.5% had a score between 13 to 30. Thus, discrimination amongst the candidates scoring higher than 12 was much better than those scoring lower than 12. Out of those 32.56% candidates who scored above 12, 15.5% scored in between 13 to 15; 8.93% in between 16 to 18;

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5.03% in between 19 to 21; 2.4% in between 22 to 24; 0.66% in between 25 to 27; and only 0.04% scored in between 28 to 30. Thus even among those who scored above 12, there was better and still better discrimination as proportions of candidates went on decreasing from one class interval higher than the other till the last class interval. We may, therefore, infer that the test of English Language was also a very good test for the purpose it was designed.

Over and Above

The very purpose of holding an examination is to discriminate the candidates in terms of individual differences among them on the ability or trait being measured. The average or the mean score obtained by the candidates in the examination is a measure that tells about the average performance of the candidates in the examination while standard deviation or S.D. is an index that tells about the dispersion or overall individual differences among the candidates on the ability or trait being measured. The significance of any score is ordinarily, its usefullness in placement of a person or candidates somewhere in the group. The greater the variance or dispersion among the scores, the more accurately (usually) each person is placed. Therefore, in order to find out as to how accurately our tests performed their task of placement or screening the candidates, some of the statistics gleaned from the earlier tables are reproduced in Table 6 below for further observation.

Table 6

Performance of the Candidates in Different Tests

S. No.	Name of the Test	No. of Item	Loss of Test Range	Mean	Median	S.D.	CV
1	Reasoning Ability	60	20%	19.50 (33%)	19.42	5.91	30.31
2	Numerical Ability	30	0%	8.66 (28.87%)	8.17	4.46	51.50
3	General Knowledge and Current Affairs	20	10%	5.84 (29%)	5.61	2.65	45.38
4	English Language	30	0%	10.92 (36.4%)	10.32	4.91	44.96

We may observe from the percentages of the mean scores of the different tests from their maximum scores given in the above table that the test of Numerical Ability had lowest percentage and test of English Language had the highest percentage, though the percentages for all the tests were low. Thus, we may infer that though all the tests were of high difficulty yet test of Numerical Ability was of still higher difficulty level. We may further observe from the above table that standard deviation which is a measure of absolute variation among the individuals, was

maximum for Reasoning Ability Test and minimum for General Knowledge and Current Affairs Test while for Numerical Ability Test and English Language Test, it did not differ much. However, on comparing the coefficients of variation, we observed that Numerical Ability Test had maximum and Reasoning Ability Test had minimum coefficients of variation while coefficients of variation for General Knowledge and Current Affairs Test, and English Language Test did not differ much. Therefore, from the point of view of difficulty and discrimination i.e. placement, we found Numerical Ability Test to be better than other tests. It is also evident from the above table that medians for the four tests were lower than their means. This indicated that distributions of all the tests were positively skewed i.e. there was pilling of candidates in the lower ends of these distributions. Thus we may infer that the four tests used in the examination, discriminated well among the candidates at higher orders of abilities assesses by them but as there was loss of 20% of score range in case of Reasoning Ability Test and its distribution was less positively skewed than the distributions of Numeriacal Ability Test and English Language Test which had no loss of score ranges, the later two tests were found to be very good.

Chapter 3

Performance of the Candidates in the Examination *vis-a-vis* Different Categories

One of the most promising human resource of a country is its youth power. With the changing needs of a society and concern for equality of opportunity strategies are to be developed so that each section of the society gets its due share. Researches conducted in the past have shown that the tools or techniques used for selection or identification of personnels were biased towards certain sections of our society or groups. Ours is a vast country, people of a variety of socio-cultural and economic background live in it. None-the-less there are differences in the curriculums adopted by the different boards of school education at the school stage but university stage too, resulting in differences in learning experiences. This gave rise to the development of culture free mental ability or aptitude tests for the selection of personnels for various jobs as per the requirement of the jobs. In the following, we have made out an attempt to find out the differences in the performance of the candidates of different categories in the examination and tests used for their selection to the posts of AAOs, in LIC. Out of the total number of 1,64,608 candidates appeared in the examination, 35 candidates did not mark their category. Of the remaining 164573 candidates, 82105 (49.89%) were from the General Category, 37659 (22.88%) were from the Officially Backward Classes (OBC), 33762 (20.52%) belonged to Scheduled Casts (SC) and 11047 (6.71%) belonged to Scheduled Tribes (ST). The categorywise frequency distributions of the total scores of the candidates in the examination are given in Appendix-A from Table I, II, III to Table IV. The ranges, means, standard deviations, variances and skewnesses of these frequency distributions are give in Table 7 below:

Table 7

Categorywise Ranges, Means, SDs, Variances and Skewnesses of the Total Score Distributions

(1) Category	(2) N	(3) Range	(4) Mean	(5) Std.	(6) Variance	(7) Skewness
GENERAL	82105	102	46.91	13.01	169.23	0.230
OBC	37659	105	44.79	12.18	148.32	0.24
SC	33762	91	40.97	11.02	121.39	0.173
ST	11047	93	40.72	11.19	125.16	0.133

We may observe from the above table that means of the different categories followed the same rank order as is the general conception about the performance of the different categories. The variances (square of standard deviations and skewnesses) also followed the same order except in case of Scheduled Castes and Scheduled Tribes the order of variances reversed and in case of General and OBC candidates the order of skewnesses reversed. The frequency distributions of the total scores of all the categories were found to be positively skewed.

To find out the significance of differences between the means of different categories, Fisher's 'Z' test was applied. The results of which are given in Tables I, II, III, IV, V and VI of Appendix B. The values of Fisher's 'Z' gleaned from these Tables are given in Table 8 below:

Table 8

**'Z' Values for the Significance of Difference Between
Means of Total Scores of Different Categories**

Category	GENERAL	OBC	SC	ST
GENERAL	–	26.64*	73.77*	47.65*
OBC	–	–	43.86*	31.44*
SC	–	–	–	1.98

* Significant at 1% level of significance

It may be observed from the above table that except the differences in the means of total scores of the candidates from scheduled castes and scheduled tribes. the differences between the means of total scores of the candidates from other categories were highly significant. Thus, we may infer that while there was no significant difference between the average performances of the SC and ST candidates in the examination, highly significant differences were noticed between the average performances of the General and OBC, General and SC, General and ST candidates, and OBC and SC, OBC and ST candidates.

The means of the different categories discussed above tells us about the average performances of the candidates. To study and compare the performances of the candidates of different categories at different points on the measuring scale, percentile scores of the candidates were worked out. These are given in Table 9 below:

Table 9

**Percentile Scores of the Candidates of
Different Categories in the Examination (Total Scores)**

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores			
		General	OBC	SC	ST
95	95	70	66	60	60
90	90	64	61	55	55
80	80	58	55	50	50
75	75	55	52	48	48
70	70	53	50	46	46
60	60	49	47	43	43
50	50	46	44	41	40
40	40	43	41	38	38
30	40	40	38	35	35
25	25	38	37	34	33
20	20	36	35	32	32
10	10	31	30	27	27
5	5	27	26	23	23

It is evident from the above table that percentile scores corresponding to all the centile points were consistently higher for the candidates of General category from OBC, SC and ST categories, and for OBC category from SC and ST categories while candidates of SC and ST categories had same percentile scores at all the points except at 25th and 50th points where candidates of SC category had higher percentile scores from ST category candidates. Therefore, we may infer that performance of the candidates of higher categories was consistently higher at all the points on the measuring scale while candidates of the categories of SC and ST had same performance at almost all the points except at first quartile and median.

For understanding the nature of differences in the distributions of scores of the different categories, a useful graphic device for picturing their distributions is shown in Figure 6. The bar diagrams there illustrate the distributions of the candidates of four categories in the examination. The median of each group is marked by a short horizontal line through the bar at the median score level. The range of the middle 50 percents (from P_{25} to P_{75} or from Q_1 to Q_3) is shown in each case by the rectangle. The black bars extend out to the points P_{10} and P_{90} - in other words to include the middle 80 percent of the cases. The line extends to points P_5 and P_{95}, or to include the middle 90 percent of the cases. The highest and the lowest scores are marked by the ✸ and ● respectively.
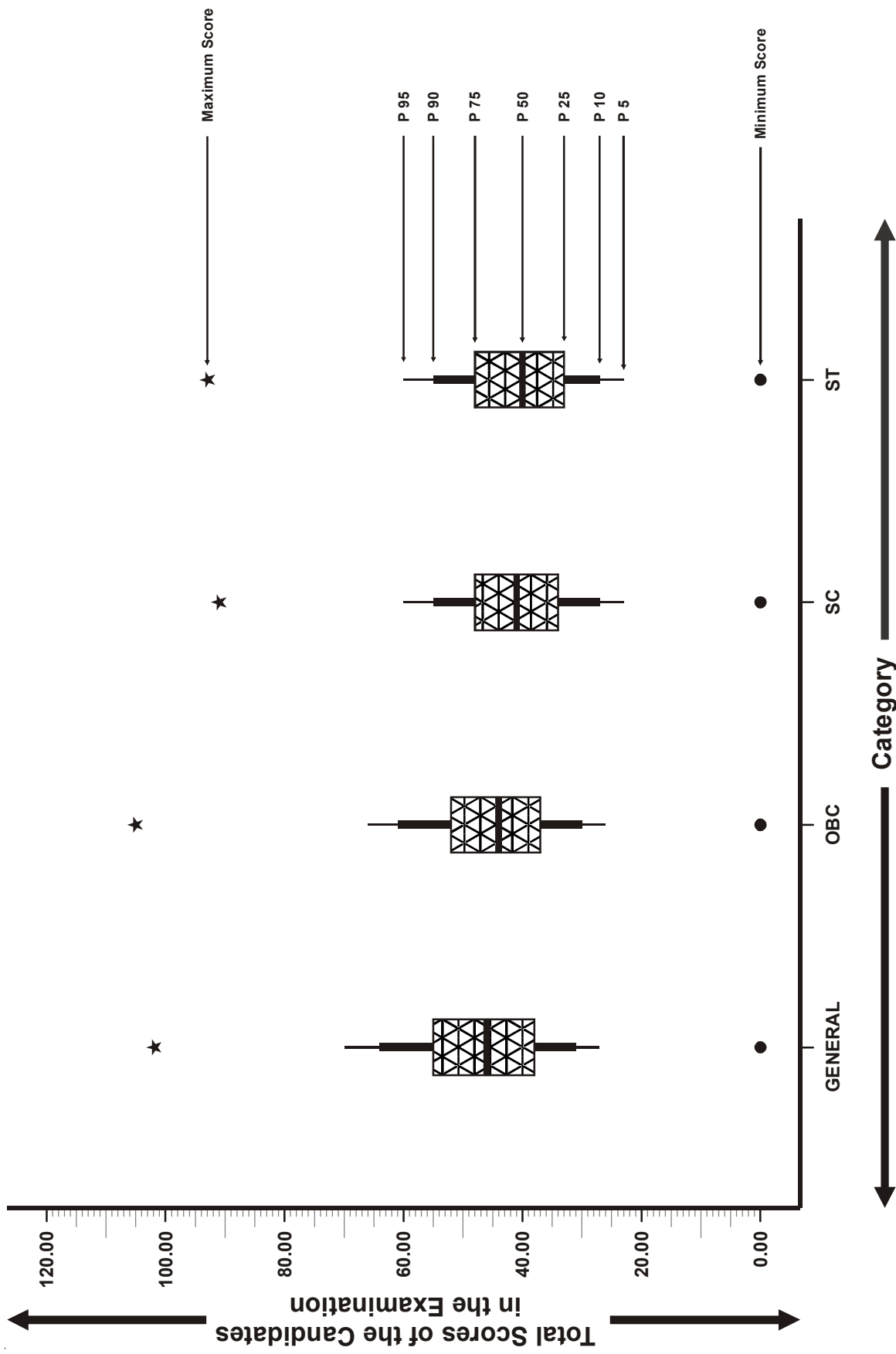
Fig. 6 - A graphic device for visual comparison of the distributions of total scores of the candidates of different categories in the examination, showing important centile values and total ranges

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In Fig. 6, it is obvious that the four medians come in the order 1,2,3,4 for General, OBC, SC and ST categories respectively. The variabilities of the four categories come in the order OBC, General, ST and SC when we depend upon the total ranges. The categories come in the rank order as for the median when we compare ranges of the middle 90 percent. When we compare middle 50 percent, these come in the rank order General, OBC, ST and SC. As to the top-most score the categories come in the same order as their total ranges but for the bottom score the four categories were almost similar. As to the skewness, the most symmetrical distribution, all things considered, was probably that for the category of SC and the least symmetrical for the category of OBC.

Performance of the Candidates of Different Categories in Reasoning Ability Test

The frequency distribution of scores of the candidates of General, OBC, SC and ST categories in Reasoning Ability Test are given in Appendix A in Table V, VI, VII and VIII respectively. The ranges, means, standard distributions, variances and skewnesses of these distributions are given in Table 10 below:

Table 10

Categorywise Ranges, Means, SDs, Variances and Skewnesses in Reasoning Ability Test

Category	N	Range	Mean	Std.	Variance	Skewness
GENERAL	82105	48	20.17	5.98	35.80	0.047
OBC	37659	45	19.74	5.69	32.35	0.03
SC	33762	41	18.20	5.52	30.52	0.057
ST	11047	37	17.65	5.45	29.75	0.063

It is evident from the above table that means of the different categories followed the same rank order in the Reasoning Ability Test as is the general conception about the performance of the candidates of these categories. The ranges, standard deviations and variances of the distributions also followed the same rank order 1,2,3 and 4 for the General, OBC, SC and ST categories respectively. As for the skewnesses of the distributions of different categories, the skewness of the distribution of scores of OBC candidates in Reasoning Ability Test was minimum while for ST candidates, it was maximum.

To find out the significance of differences between the means of different categories in Reasoning Ability Test, 'Z' values gleaned from Table I, II, III, IV, V and VI of Appendix-B, are given in Table 11 below:

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Table 11

**'Z' values for the Significance of Differences Between
Means of Different Categories in Reasoning Ability Test**

Category	General	OBC	SC	ST
GENERAL	–	12.063*	52.133*	41.976*
OBC	–	–	36.573*	34.202*
SC	–	–	–	9.071*

*Significant at 5% level of significance

It is evident from the above table that the differences between the means of Reasoning Ability Test scores of all the categories were significant.

To find out the difference between the performance of the candidates of different categories in Reasoning Ability Test at different points on the scale of measurement, percentile scores were worked out. These are given in Table 12 below:

Table 12
**Percentile scores of the Candidates of Different Categories
in Reasoning Ability Test**

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores			
		General	OBC	SC	ST
95	95	30	29	27	27
90	90	28	27	25	25
80	80	25	24	23	22
75	75	24	24	22	21
70	70	23	23	21	20
60	60	22	21	20	19
50	50	20	20	18	18
40	40	19	18	17	16
30	30	17	17	15	15
25	25	16	16	15	14
20	15	15	15	14	13
10	10	13	13	11	11
5	5	10	10	9	9

It is evident from the above table that percentile scores of the candidates of General and OBC categories in Reasoning Ability Test were same at 75th, 70th, 50th, 30th, 25th, 20th, 10th and 5th points while percentile scores of SC and ST category candidates at all the points were lower from General and OBC categories. Further, percentiles scores of the candidates of ST category at 80th, 75th, 70th, 60th, 40th, 25th and 20th points were lower from SC category candidates. This indicated that the performance of the candidates of General and OBC categories in Reasoning Ability Test at third quartile and below except at60th and 40th points was same and performance of the candidates of SC and ST candidates was lower than them at all points. However, though the performance of the SC and ST category was same at few points yet at most of the points ST category candidates had lower performance from SC category candidates.

A visual presentation of the distribution of scores of different categories in Reasoning Ability Test showing important centile values and total ranges is given in Figure 7.

In Fig. 7, it is obvious that the medians of General and OBC candidates are same, and medians of SC and ST candidates though lower than them but they are also same. The variabilities of the four categories are in the rank order 1, 2, 3, 4 for General, OBC, SC and ST respectively when we depend upon the total ranges. This is visual confirmation of the values of ranges given in Table 10 earlier. The range of the middle 90 percent for General Category is higher from OBC category but for SC and ST categories though the ranges of middle 90 percent are equal yet they are lower from the General and OBC categories. The ranges of the middle 50 percent are equal for General and OBC candidates and also for SC and ST candidates though the ranges for the former two categories are higher from the later two categories. The bottom scores of the four categories are almost equal but the top-most scores are in the rank order 1, 2, 3 and 4 for the General, OBC, SC and ST categories respectively.

Performance of the Candidates of Different Categories in Numerical Ability Test

The frequency distributions of scores of the candidates of four categories in Numerical Ability Test are given in Appendix A in Table IX, X, XI and XII respectively. The ranges, means, standard deviations, variances and skewness of these distributions are given in Table 13 below:

Fig. 7 - A graphic device for visual comparison of the scores of the candidates of different categories in Reasoning Ability Test, showing important centile values and total ranges

Table 13

**Categorywise Ranges, Means, SDs, Variances and Skewnesses
for Numerical Ability Test Scores**

Category	N	Range	Mean	SD	Variance	Skewness
GENERAL	82105	30	9.06	4,71	22,23	0.585
OBC	37659	28	8.93	4.52	20.45	0.60
SC	33762	27	7.55	3.75	14.07	0.494
ST	11047	26	7.40	3.83	14.70	0.564

We may observe from the above table that the means of Numerical Ability Test scores also confirmed the general conception about the performance of the different categories as was confirmed by the total scores in the examination and Reasoning Ability Test scores. The ranges were in the rank order 1, 2, 3 and 4 for General, OBC, SC and ST candidates respectively but the variabilities as is indicated by the values of standard deviations and variances in the above table, were higher for candidates of ST categories from SC category candidates. We may also observe from the above table that the frequency distribution of scores of the candidates of OBC category was more positively skewed and that of the candidates of SC category was least positively skewed than the candidates of other categories.

To find out the significance of differences between the means of different categories in Numerical Ability Test, the values of 'Z' gleaned from Tables I, II, III, IV, V and VI of Appendix-B, are given in Table 14 below:

Table 14

**'Z' values for the Significance of Differences Between
Means of Different Categories in Numerical Ability Test**

Category	General	OBC	SC	ST
GENERAL	–	4.632*	52.626*	35.406*
OBC	–	–	44.06*	32.171*
SC	–	–	–	3.423*

*Significant at 1% level of significance

As all the values of 'Z' given in the above table were significant, it indicated that there were significant differences between the mean scores of the candidates of different categories in Numerical Ability Test.

In order to study the differences in the performance of the candidates of different categories in Numerical Ability Test at different points on the measuring scale, percentiles scores were found. These are given in Table 15 below:

Table 15

**Percentile Scores of the Candidates of Different Categories
in Numerical Ability Test**

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores			
		General	OBC	SC	ST
95	95	18	17	14	14
90	90	16	15	12	12
80	80	13	12	10	10
75	75	12	11	10	10
70	70	11	11	9	9
60	60	10	9	8	8
50	50	9	8	7	7
40	40	7	7	7	6
30	30	6	6	6	5
25	25	6	6	5	5
20	20	5	5	4	4
10	10	3	4	3	3
5	5	2	2	2	1

We may observe from the above table that percentile scores of the candidates of General Category in Numerical Ability Test at 50th point (median) and above were higher from the candidates of OBC, SC and ST categories while two later categories had same percentile scores at these points. At 5th, 30th and 40th points General, OBC, SC and ST category candidates had same percentile scores but candidates of SC category had higher percentile scores from ST category candidates. At 20th and 25th points candidates of General and OBC categories, and candidates of SC and ST categories had same percentile scores but the percentile scores of two former categories were higher from the percentile scores of two later categories. We may, therefore, infer that by and large General Category candidates had better performance from the candidates of OBC, SC and ST categories, and OBC category candidates had better performance from the candidates of SC and ST categories at the median and above while performance of the candidates of SC and ST categories was same at median and above.

A visual presentation of the distribution of scores of different categories in Numerical Ability Test showing important centile values and total ranges is given in Figure 8.

In fig. 8 it is obvious that the median of General Category was higher from the medians of OBC, SC and ST categories and median of OBC category was higher from the medians of SC and ST categories while SC and ST categories had same medians. The variabilities of the four categories came in the order 1, 2, 3 and 4 for General, OBC, SC and ST respectively when we depended upon the total ranges. The ranges of middle 90 percent were of the order 1,2,3 and 4 for OBC, General, ST and SC respectively. The range of middle 50 percent was higher for General Category from other categories but for OBC, SC and ST categories ranges of middle 50 perecnt were same. As to the top-most scores, the categories were in the same rank order as for their total ranges but their bottom scores were same.

Performance of the Candidates of Different Categories in General Knowledge & Awareness of Current Affairs Test

The categorywise frequency distribution of scores of the candidates in General Knowledge and Awareness of Current Affairs are given in Appendix A from Table XIII to Table XVI. The ranges, means, standard deviations, variances and skewnesses of these distributions are given in Table 16 below:

Table 16

**Categorywise Ranges, Means, SDs, Variances and Skewnesses
for General Knowledge and Awareness of Current Affairs Test**

Category	N	Range	Mean	SD	Variance	Skewness
GENERAL	82105	30	5.79	2.60	22.23	0.585
OBC	37659	28	5.80	2.68	20.45	0.60
SC	33762	27	5.71	2.47	14.07	0.494
ST	11047	26	6.12	2.57	14.70	0.564

We may observe from the above table that the candidates belonging to ST category had higher mean score and those belonging to SC category had lower mean score than the candidates of other categories. As far as the standard deviations and skewnesses of the frequency distributions for different categories are concerned, the standard deviation and skewness for the distribution of scores of OBC category candidates were higher and for SC category candidates were lower from other categories.

To find out the significance of the differences between the means of different categories in the General Knowledge and Awareness of Current Affairs Test, values of 'Z' gleaned from Tables I, II, III, IV, V and VI of Appendix B are given in Table 17 below:
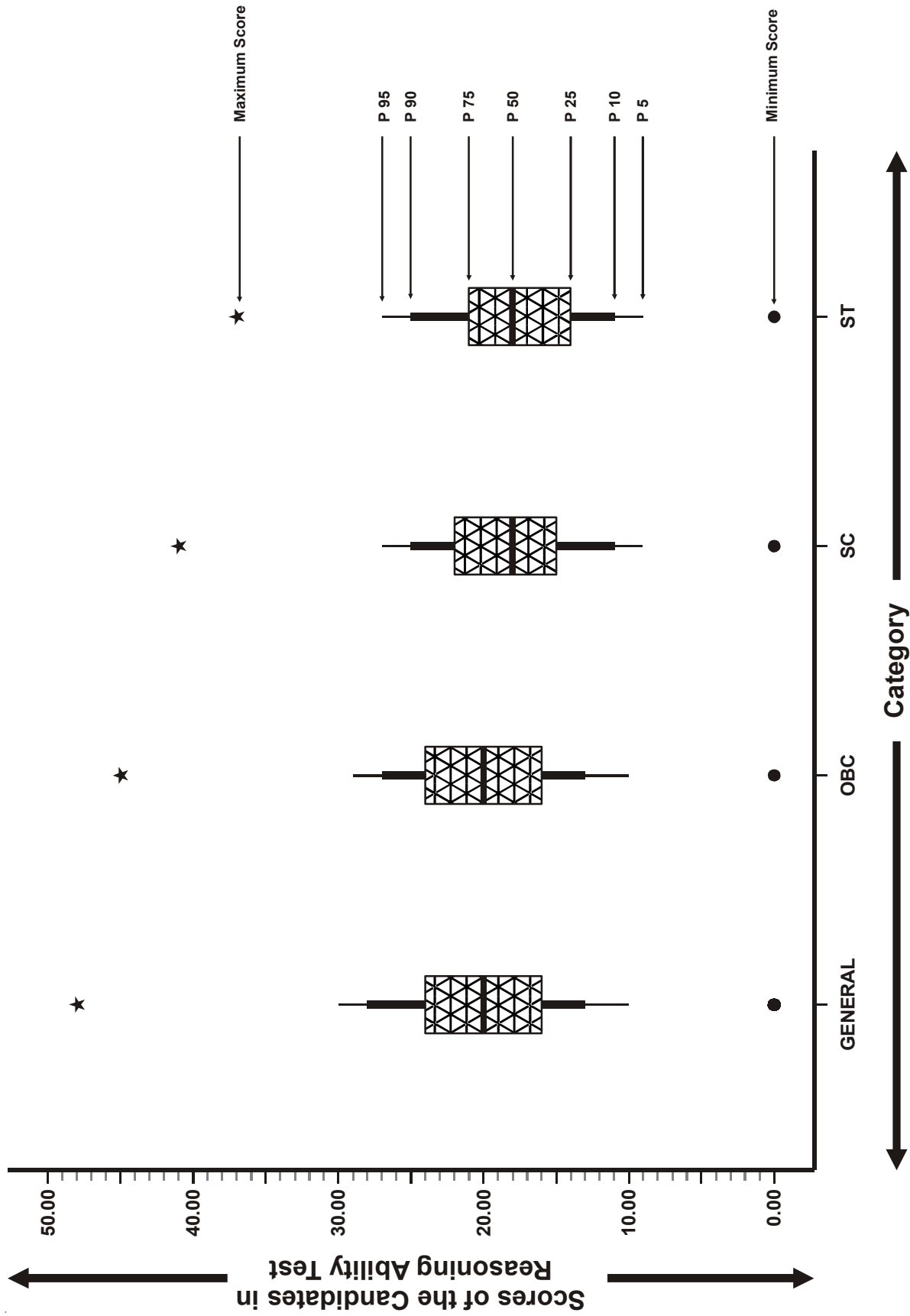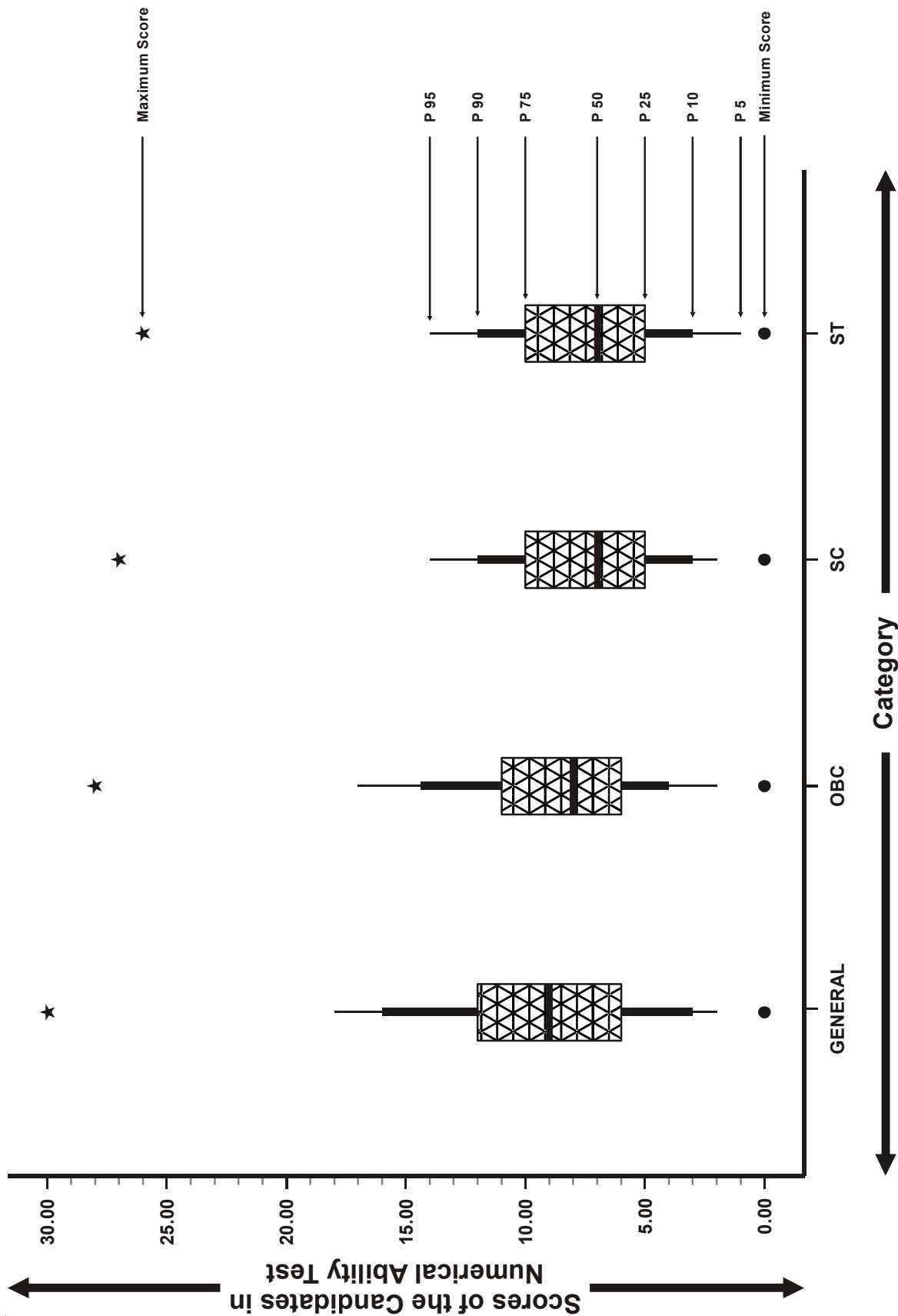
Fig. 8 - A graphic device for visual comparison of scores of the candidates of different categories in Numerical Ability Test showing important centile values and total ranges

Table 17

'Z' values for the Significance of Differences Between Means of Different Categories in General Knowledge and Awareness of Current Affairs Test

Category	General	OBC	SC	ST
GENERAL	–	0.326	5.116*	12.296*
OBC	–	–	4.654*	11.073*
SC	–	–	–	14.945*

* Significant at 1% level of significance

We may observe from the above table that except the difference between the mean performances of General and OBC categories, other differences were significant. Therefore, we may infer that the mean performances of the candidates of General and OBC Categories in General Knowledge and Awareness of Current Affairs Test did not differ significantly while significant differences were noticed between the mean performances of the candidates of General and SC, General and ST, and OBC and SC, OBC and ST and SC and ST categories.

The percentile scores of the candidates of different categories in General Knowledge and Awareness of Current Affairs Test are given in Table 18 below:

Table 18

Percentile scores of the candidates of Different Categories in General Knowledge Current Affairs Test

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores			
		General	OBC	SC	ST
95	95	10	11	10	10
90	90	9	9	9	10
80	80	8	8	8	8
75	75	7	7	7	8
70	70	7	7	7	7
60	60	6	6	6	7
50	50	6	6	6	6
40	40	5	5	5	5
30	30	4	4	4	5

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores			
		General	OBC	SC	ST
25	25	4	4	4	4
20	20	4	4	4	4
10	10	3	3	3	3
5	5	2	2	2	2

We may observe from the above table that percentile scores of the candidates of four categories in General Knowledge and Awareness of Current Affairs Test except at 30th, 60th, 75th, 90th and 95th points were same. At 30th, 60th, 75th and 95th points percentile scores of ST category candidates were higher from the candidates of remaining three categories while later three categories had same percentile scores at these points. At 95th point percentile scores of OBC category candidates were higher from remaining three categories while three later categories also had same percentile scores at this point. We may therefore infer that the performance of the candidates of four categories did not differ much at different points on the measuring scale in General Knowledge and Awareness of Current Affairs Test. A visual presentation of the distribution of scores of different categories in General Knowledge and Awareness of Current Affairs Test showing important centile values and total ranges is given in Figure 9.

In Fig. 9 it is obvious that the four categories have same medians. If we take into consideration variabilities of middle 90 percent, the variability of OBC category is higher from General, SC and ST categories which have same variabilities. The variability of middle 50 percent is higher for ST category from General, OBC and ST categories which also have same variability. As to the top-most score General and OBC categories and SC and ST categories have same top-most scores but the top-most score of the former two categories was higher from the top-most scores of the later two categories. The bottom scores of the four categories are same.
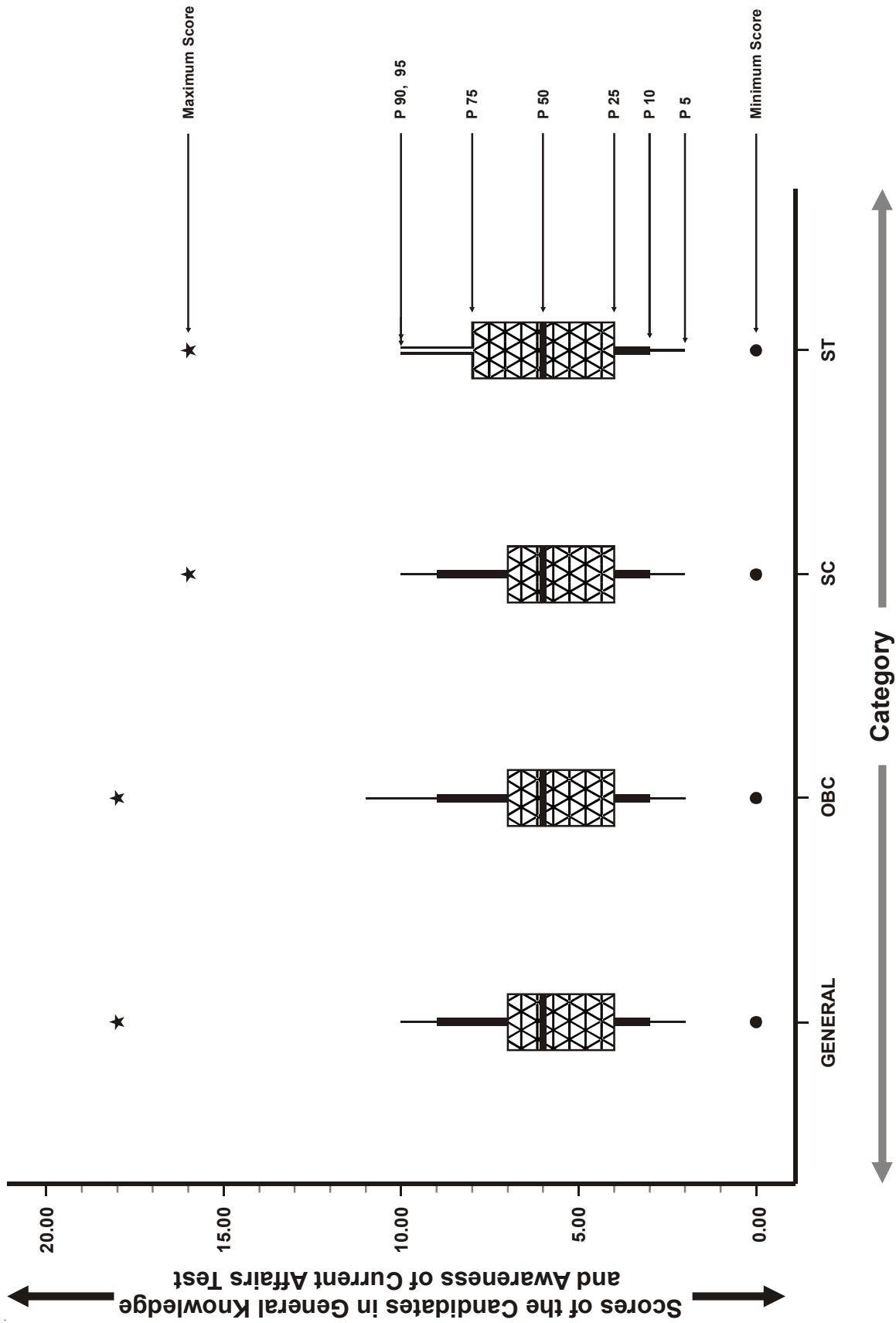
Fig. 9 - A graphic device for visual comparison of scores of the candidates of different categories in General Knowledge and Awareness of Current Affairs Test showing important centile values and total ranges

Performance of the Candidates of Different Categories in English Language Test

The categorywise frequency distributions of scores in English Language Test are given in Appendix A from Table XVII to Table XX. The ranges, means, standard deviations, variances and skewnesses of these distributions are given in Table 19 below:

Table 19

Categorywise Ranges, Means, SDs, Variances and Skewnesses of English Language Test Scores

Category	N	Range	Mean	Std.	Variance	Skewness
GENERAL	82105	30	11.88	5.20	27.00	0.350
OBC	37659	28	10.33	4.48	20.03	0.44
SC	33762	29	9.51	4.22	17.78	0.515
ST	11047	29	9.55	4.57	20.93	0.682

We may observe from the above table that mean of the General category was higher from the means of other three categories and mean of OBC category was higher from the means of SC and ST categories, and mean of ST category was higher from the mean of SC category. As to the variability of scores, the range of which, is a crude measure, was higher for the General category from the other categories and lower for OBC category from SC and ST categories while later two categories had same ranges. The standard deviation and variance (SD^2) which provides objective measure of variability, was higher for General Category and lower for SC category from other three categories while ST category had higher standard deviation and variance from OBC category. As to the skewness of the distribution of scores, it was minimum for General category but maximum for ST category. To find out the significance of the differences between means of different categories in English Language Test, values of 'Z' gleaned from Table I, II, III, IV, V and VI of Appendix-B are given in Table 20 below:

Table 20

'Z' values for the Significance of Differences Between Means of Different Categories in English Language Test

Category	General	OBC	SC	ST
GENERAL	–	26.644*	74.439*	44.851*
OBC	–	–	25.163*	15.993*
SC	–	–	–	0.911

* Significant at 1% level of significance

It may be observed from the above table that differences between the means of different categories except between SC and ST category, were highly significant.

The percentile scores of the candidates of different categories in English Language Test are given in Table 21 below:

Table 21
Percentile scores of the candidates of Different Categories in
English Language Test

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores			
		General	OBC	SC	ST
95	95	21	19	17	18
90	90	19	16	15	16
80	80	16	14	13	13
75	75	15	13	12	12
70	70	14	12	10	10
60	60	13	11	11	11
50	50	11	10	9	9
40	40	10	9	8	8
30	30	9	8	7	7
25	25	8	7	7	7
20	20	8	7	6	6
10	10	6	5	5	4
5	5	4	4	3	3

It is obvious from the above table that the performance of General category candidates in English Language Test at all the points except at 5th point where General and OBC categories had same performance, was higher from other categories. The performance of OBC category candidates was also higher at all the points except at 10th point where OBC and SC categories have same performance, and at 25th point where OBC, SC and ST categories have same performance, from SC and ST categories. The performance of SC category at all the points except at 90th and 95th points where ST category had higher performance from ST category was same as of ST category A visual presentation of the distribution of scores of different categories in English Language Test showing important centile values and total ranges is given in Figure 10.
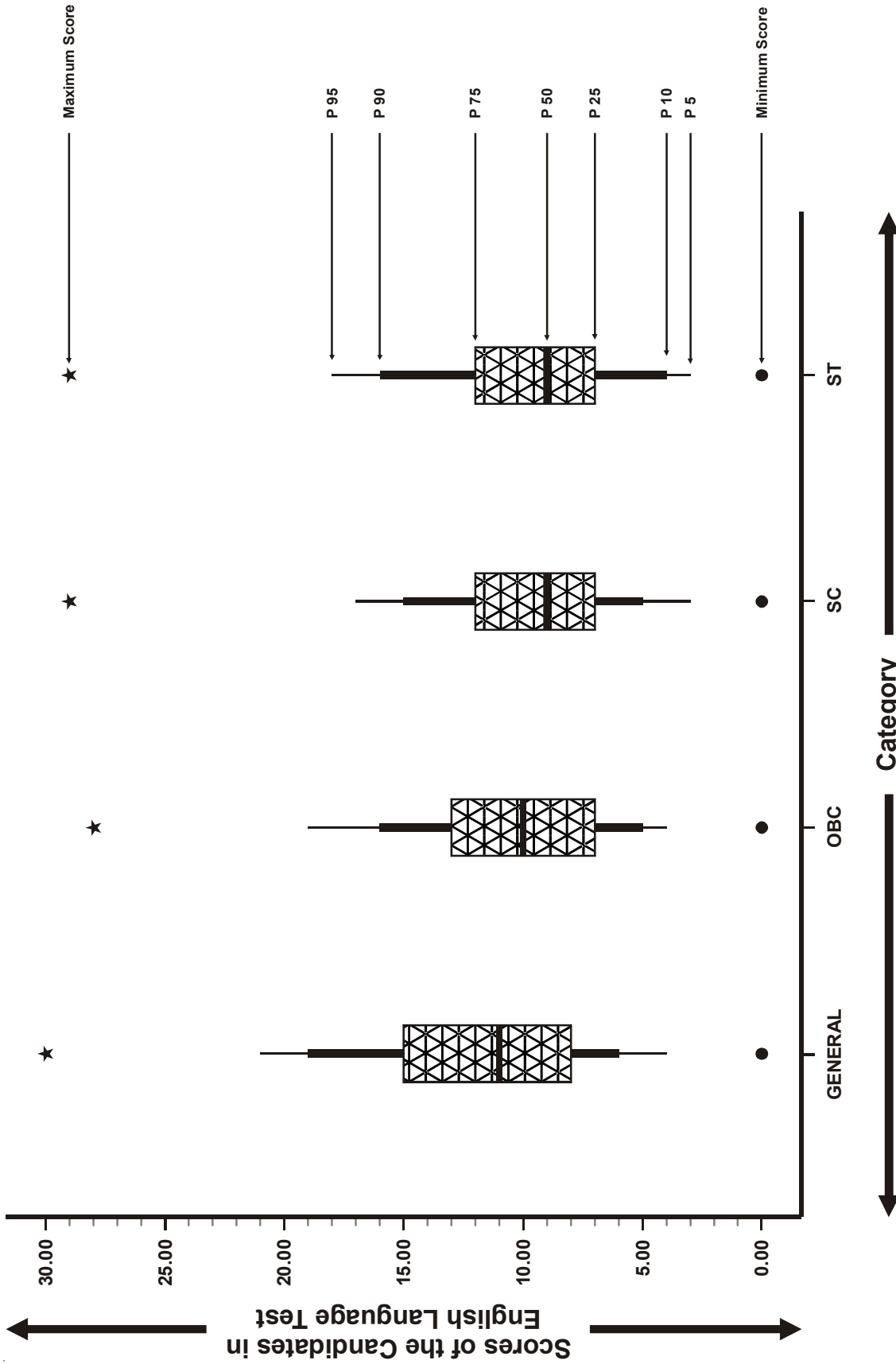
Fig. 9 - A graphic device for visual comparison of scores of the candidates of different categories in English Language Test showing important centile values and total ranges

In Fig. 10, it is obvious that the median of the General category is higher from the medians of OBC, SC and ST categories and median of OBC category is higher from the medians of SC and ST categories while SC and ST categories have same medians. If we depend upon the total ranges, the variability of General category is higher and variability of OBC category is lower from the variabilities of other categories while SC and ST categories have the same variability. The range of middle 90 percent is also higher for General category from the remaining three categories while OBC and ST categories have same ranges of middle 90 percent and SC category has the lowest range middle 90 percent amongst them. If we consider the ranges of middle 50 percent, it is higher for General category from the remaining three categories while SC and ST categories have the same range of middle 50 percent. As to the top-most score, it was higher for General Category and lower for OBC category from the remaining three categories while for SC and ST categories the top-most scores were same. The four categories have the same bottom scores.

Overall

We may conclude from the foregoing discussion that performance of the General Category candidates from OBC category candidates and that of OBC category candidates from SC category candidates was better in the Examination and English Language Test while the performance of SC and ST category candidates did not differ in the examination and in English Language Test except that in English Language ST category candidates at 90th and 95th centile points had better performance from SC category candidates. In Numerical Ability Test at 50th centile point i.e. median and above, General category candidates had better performance from OBC category candidates and OBC category candidates had better performance from SC and ST category candidates while performance of SC and ST category candidates was same at all the points except at 5th point in Numerical Ability Test. In General Knowledge and Awareness of Current Affairs Test performance of General, OBC, SC and ST category candidates was almost the same, except at 30th, 60th, 75th and 90th points where ST category candidates had better performance from the candidates of the remaining three categories. We may, therefore, consider performance of the candidates of ST category to be little better in General Knowledge and Awareness of Current Affairs Test from the candidates of other categories.

Chapter 4

Performance of Candidates in the Examination
vis-a-vis Gender

Out of the total number of 1,64,608 candidates who appeared in the examination 25,666 did not indicate their gender. Thus, out of 1,38,942 candidates who indicated their gender 92,549 (66.00%) were male and 46,393 (33.39%) were female. The frequency distributions of total scores of male and female candidates are given in Tables XXI and XXII respectively in Appendix A. The means, standard deviations, skewnesses and value of 'Z' for the significance of difference between the means of male and female candidates are given in Table 22 below:

Table 22
Genderwise Means, SDs, Variances, Skewness and Value of 'Z'
for the Total Score Distributions

Gender	N	Mean	SD	Skewness	Z-value	Remarks
Male	92549	45.678	12.851	0.272	35.482	Sig.
Female	46393	43.142	11.973	0.228	–	–

*Significant at 1% level of significance.

It may be observed from the above table that mean of the total scores of the male candidates in the examination was higher than the female candidates. The value of 'Z' given in the above table indicated that male and female candidates differ significantly with respect to their average performances in the examination. The values of SDs in the table indicated the variation amongst the male candidates with respect to total scores in the examination was higher from the female candidates. Skewnesses in the table indicated that distribution of total scores of the male candidates was more positively skewed than the female candidates.

For a better understanding of the differences in the performance of male and female candidates with respect to total scores in the examination, percentile scores at important centile points were worked out. These are given in Table 23 below:

Table 23

**Percentile Scores of Male and Female Candidates with respect to
Total Scores in the Examination**

(1) Centile Point	(2) Percentage below	(3) Percentile Score	
		Male	Female
95	95	68	64
90	90	63	59
80	80	56	53
75	75	54	51
70	70	52	49
60	60	48	46
50	50	45	43
40	40	42	40
30	30	39	37
25	25	37	35
20	20	35	33
10	10	30	28
5	5	26	24

It may be observed from the above table that percentile scores of male candidates at all the points for the total scores in the examination were higher from the female candidates. Therefore, we may infer that the overall performances of male candidates in the examination was better than the female candidates. A visual presentation of the comparison of the distributions of total scores of male and female candidates showing important centile values and total ranges is given in Figure 11.

In Fig. 11 it is obvious that the median, total range, range of middle 90 percent and range of middle 50 percent were higher for the male candidates from the female candidates. The top-most score also was higher for the male candidates from the female candidates. The bottom scores, however, were same for both.
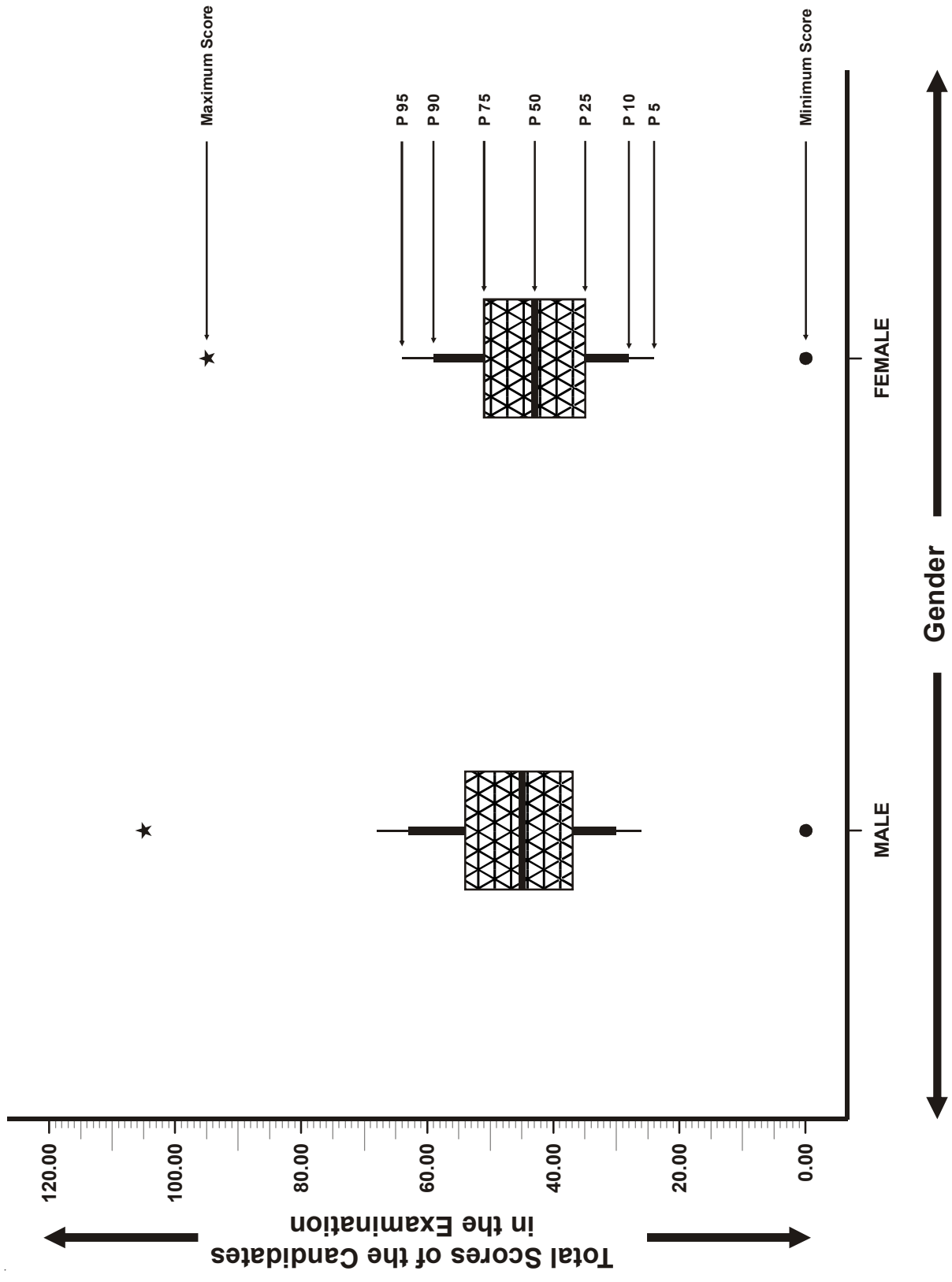
Fig 11 - A graphic device for visual comparison of the total scores of male and female candidates in the examination showing important centile values and total ranges

Performance of Males and Females in Reasoning Ability Test

Genderwise frequency distributions of scores in Reasoning Ability Test are given in Tables XXIII and XXIV of Appendix-A. The means, standard deviations, skewnesses and value of 'Z' for the significance of difference between the means of these distributions are given in Table 24 below:

Table 24

**Genderwise Means, SDs, Skewnesses and Value of 'Z'
for Reasoning Ability Test Scores**

Gender	N	Mean	SD	Skewness	Z-value	Remarks
Male	92549	19.660	5.871	0.049	11.622	Sig.*
Female	46393	19.272	5.875	0.102	–	–

* Significant at 1% level of significance.

We may observe from the table that as was the case for the total score distributions in the examination, the mean for the distributions of scores in Reasoning Ability Test was also higher for male candidates from the female candidates but standard deviation and skewness for male candidates were lower from female candidates. This indicated that though the average performance of the male candidates was better from the female candidates yet variation amongst the scores of the male candidates was lower than the female candidates and distribution of scores of male candidates was also less skewed than the distribution of scores of female candidates.

Genderwise percentile scores of the candidates in Reasoning Ability Test are given in Table 25 below:

Table 25

Genderwise Percentile Scores of the Male and Female Candidates in Reasoning Ability Test

(1) Centile Point	(2) Percentage below	(3) Percentile Scores	
		Male	Female
95	95	30	29
90	90	27	27
80	80	25	24
75	75	24	23

(Contd. on next page)

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(1) Centile Point	(2) Percentage below	(3) Percentile Scores	
		Male	Female
70	70	23	22
60	60	21	21
50	50	20	19
40	40	18	18
30	30	17	16
25	25	16	15
20	20	15	14
10	10	12	12
5	5	10	10

It is obvious from the above table that percentile scores of male candidates at almost all the points except at 5th, 40th, 60th and 90th points in Reasoning Ability Test were higher from the female candidates. At 5th, 40th and 90th points also percentile scores of the two were equal. We may, therefore, infer that performance of the male candidates to a greater extent was better than the female candidates in Reasoning Ability Test. The visual presentation of the comparison of the distributions of male and female candidates in Reasoning Ability Test showing important centile values and total ranges is given in Figure 12.

We may observe in Figure 12 that the median, total range, range of middle 90 percent and range of middle 50 percent in the test of Reasoning Ability for the males were higher from the females. The top-most score for the males was also higher from the females while bottom scores of both were same.

Performance of Males and Females in Numerical Ability Test

Frequency ditributions of scores of the male and female candidates in the test of Numerical Ability are given in Tables XXV and XXVI of Appendix A. The means, standard deviations, skewnesses and value of 'Z' are given in Table 26 below:
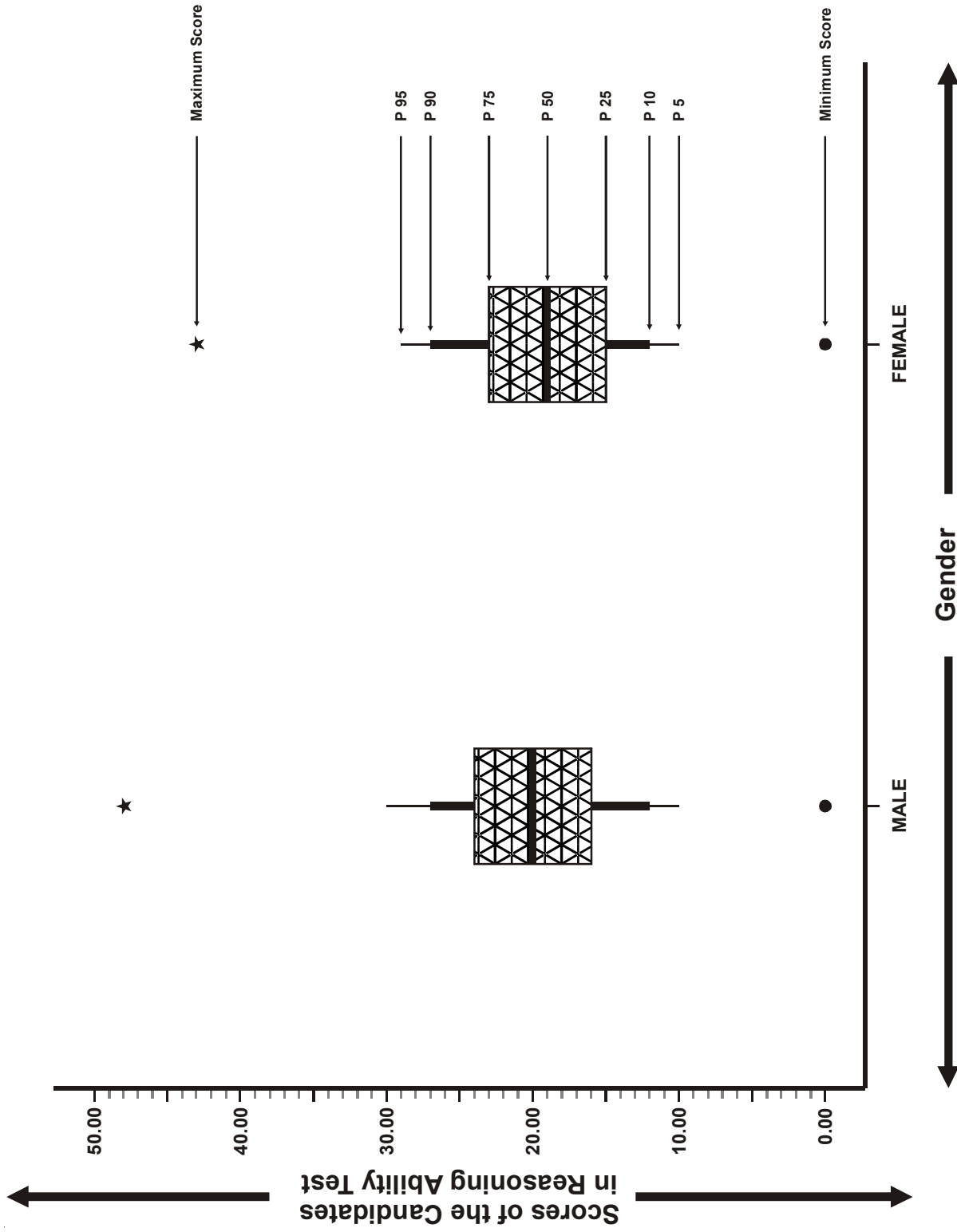
Fig. 12 - A graphic device for visual comparison of the scores of male and female candidates in Reasoning Ability Test showing some important centile values and total ranges

Table 26

**Genderwise Means, SDs, Skewnesses and 'Z' Value
for Numerical Ability Test Scores**

Gender	N	Mean	SD	Skewness	Z-value	Remarks
Male	92549	9.242	4.646	0.603	71.136	Sig.*
Female	46393	7.448	3.983	0.553	–	–

*Significant at 1% level of significance.

We may observe from the above table that the mean score, standard deviation and skewness of the distribution of scores of male candidates were higher from the female candidates in Numerical Ability Test. The value of 'Z' given in the above table indicated that performance of the male candidates was significantly different from the female candidates. The higher values of SD and skewness for male candidates indicated that individual differences amongst the male candidates were higher from the female candidates and distribution of scores of male candidates was more positively skewed than the distribution of scores of the female candidates.

Genderwise percentile scores of the candidates in Numerical Ability Test are given in Table 27 below:

Table 27

Genderwise Percentile Scores of the Candidates in Numerical Ability Test

(1) Centile Point	(2) Percentage Below	(3) Percentile Scores	
		Male	Female
95	95	18	15
90	90	16	13
80	80	13	10
75	75	12	10
70	70	11	9
60	60	10	8
50	50	9	7
40	40	8	6
30	30	7	5
25	25	6	5
20	20	6	4
10	10	4	2
5	5	2	1

We may observe from the above table that male candidates performed better than the female candidates as far as percentile scores of the male and female candidates at different points of the measuring scale in Numerical Ability Test are concerned. The visual presentation of the comparison of the distributions of males and females in the Numerical Ability Test showing important centile values and total ranges is given in Figure 13.

We may observe in Figure 13 that median, total range, range of middle 95 percent, range of middle 50 percent are higher for the male candidates from the females candidates. The top-most score for the male candidates is also higher from the female candidates. The bottom scores, however, are same for both. Therefore, we may infer that the performance of the male candidates was better from the female candidates in Numerical Ability Test.

Performance of Males and Females in General Knowledge and Awareness of Current Affairs Test

Frequency distributions of scores of the male and female candidates in the test of General Knowledge and Awareness of Current Affairs are given in Tables XXVII and XXVIII of Appendix-A. The means, standard deviations, skewnesses and value of 'Z' for the significance of difference between the means are given in Table 28 below:

Table 28

**Genderwise Means, SDs, Skewnesses and 'Z' Value for
General Knowledge and Awareness of Current Affairs Test**

Gender	N	Mean	SD	Skewness	Z-value	Remarks
Male	92549	6.103	2.683	0.281	66.612	Sig.
Female	46393	5.134	2.279	0.291	–	–

We may observe from the above table that mean score of the male candidates was significantly higher from the female candidates in General Knowledge and Awareness of Current Affairs Test. This indicates that the average performance of the males in General Knowledge and Awareness of Current Affairs Test was better from the females. The values of S.Ds. and skewnesses given in the above table indicated that inter individual differences or variability among the male candidates was more than the female candidates but the distribution of scores of male candidates was less positively skewed than the female candidates.

Percentile scores of male and female candidates in General Knowledge and Awareness of Current Affairs Test are given in Table 29 below:

Fig. 13 - A graphic device for visual comparison of the scores of male and female candidates
in Numerical Ability Test showing some important centile values and total ranges

Table 29

Genderwise Percentile Scores of the Candidates in General Knowledge and Awareness of Current Affairs Test

(1) Centile Point	(2) Percentage Below	(3) Percentile Scores	
		Male	Female
95	95	11	9
90	90	10	8
80	80	8	7
75	75	8	7
70	70	7	6
60	60	7	6
50	50	6	5
40	40	5	4
30	30	5	4
25	20	4	4
20	10	4	3
10	10	4	2
5	5	2	2

We may observe from the above table that percentile scores of the male candidates at all the points on the measuring scale except at 5th and 25th points, were better for female candidates in General Knowledge and Awareness of Current Affairs Test. At 5th and 25th points their percentile scores were, however, same. Thus, we may infer that by and large performance of the male candidates was better from the female candidates in General Knowledge and Awareness of Current Affairs Test. A visual presentation of the comparison of the distributions of male candidates and female candidates in General Knowledge and Awareness of Current Affairs Test showing important centile values and total ranges is given in Figure 14.

We may observe in Figure 14 that the median, range of middle 95 percent, range of middle 90 percent, range of middle 75 percent and range of middle 50 perecnt for the male candidates are higher from the female candidates. The total ranges, top-most scores and bottom scores are, however, same for both.
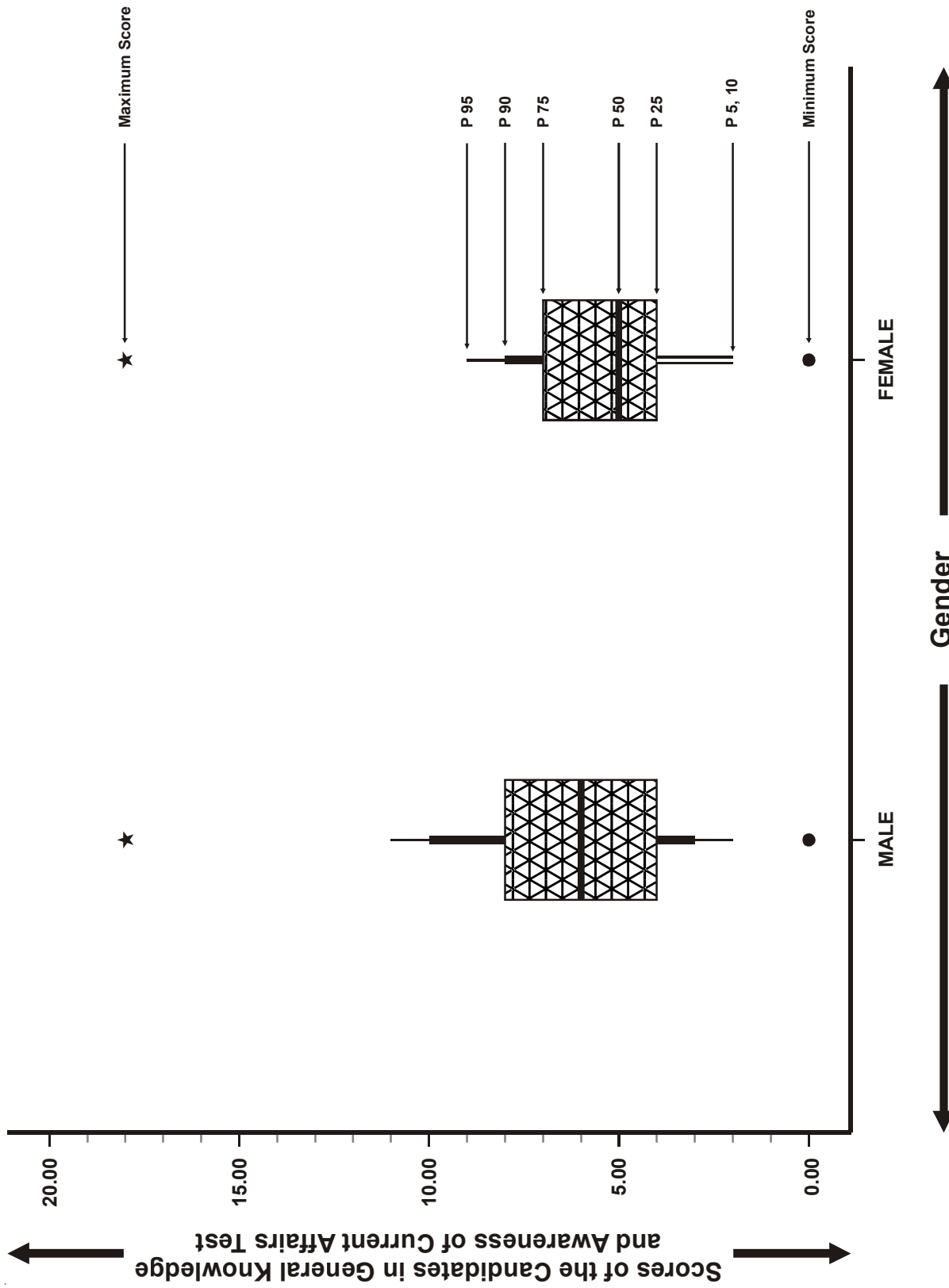
Fig. 14 - A graphic device for visual comparison of the scores of male and female candidates in General Knowledge and Current Affairs Test showing some important centile values and total ranges

Performance of Males and Females
in English Language Test

Frequency distributions of scores of the male and female candidates in the test of English Language are given in Tables XXIX and XXX of Appendix A. The means, standard deviations, skewness of these distributions and vale of 'Z' for the significance of difference between the means are given in Table 30 below:

Table 30

Genderwise Means, SDs, Skewnesses and value of 'Z'
for English Language Test Score

Gender	N	Mean	SD	Skewness	Z-value	Remarks
Male	92549	10.673	4.857	0.488	21.979	Sig.*
Female	46393	11.288	5.048	0.444	–	–

*Significant at 1% level of significance.

We may observe from the above table that mean score of the female candidates was significantly higher than the male candidates in English Language Test. The spread of scores of the female candidates as indicated by the values of SDs given in the above table, was also higher from the male candidates but the distribution of scores of the female candidates as is indicated by the values of skewnesses was less skewed than the male candidates.

Genderwise percentile scores of the male and female candidates in English Language Test are given in Table 31 below:

Table 31

Percentile scores of the Male and Female cabdidates
in English Language Test

(1) Centile Point	(2) Percentage below	(3) Percentile Scores	
		Male	Female
95	95	20	21
90	90	17	18
80	80	15	15
75	75	13	14
70	70	13	13

(1) Centile Point	(2) Percentage below	(3) Percentile Score	
		Male	Female
60	60	11	12
50	50	10	11
40	40	9	10
30	30	8	8
25	25	7	8
20	20	7	7
10	10	5	5
5	5	4	4

We may observe from the above table that percentile scores of the female candidates in English Language Test at 25th, 40th, 50th, 75th, 90th and 95th points were higher from the male candidates while at the remaining points percentile scores of both were same. We may, therefore, infer that performance of the female candidates to a lesser extent was better from the male candidates in English Language Test. A visual presentation of the ccomparison of the distributions of male and female candidates in English Language Test showing important centile values and total ranges, is given in Figure 15.

We may observe in Figure 15 that the median, total range, range of middle 90 percent and range of middle 80 percent are higher for the female candidates from the male candidates. The ranges of middle 50 percent are, however, same for both. As to the top-most score, the top-most scores of female candidates is also higher from the male candidates. The bottom scores for both are same.

Overall

We may conclude that performance of the male candidates in the examination (total scores), in Reasoning Test Ability Test, Numerical Ability Test and General Knowledge and Awareness of Current Affairs Test was better from the female candidates as the former had higher means, percentile scores at important centile points, total ranges, ranges of middle 90 percent, ranges of middle 50 percent and top-most scores in the examination and in all these tests. However, in case of English Language Test we noticed a higher mean, higher percentiles at 25th, 40th, 50th, 60th, 75th, 80th and 95th points, higher total range and higher ranges of middle 90 and 80 percents, and higher top-most score for the female from the male candidates. Therefore, we may conclude that while male candidates had a better performance in the, and Reasoning Ability Test, Numerical Ability Test and General Knowledge and Awareness of Current Affairs Test from the female candidates, the later had better performance in English Language Test from the former.
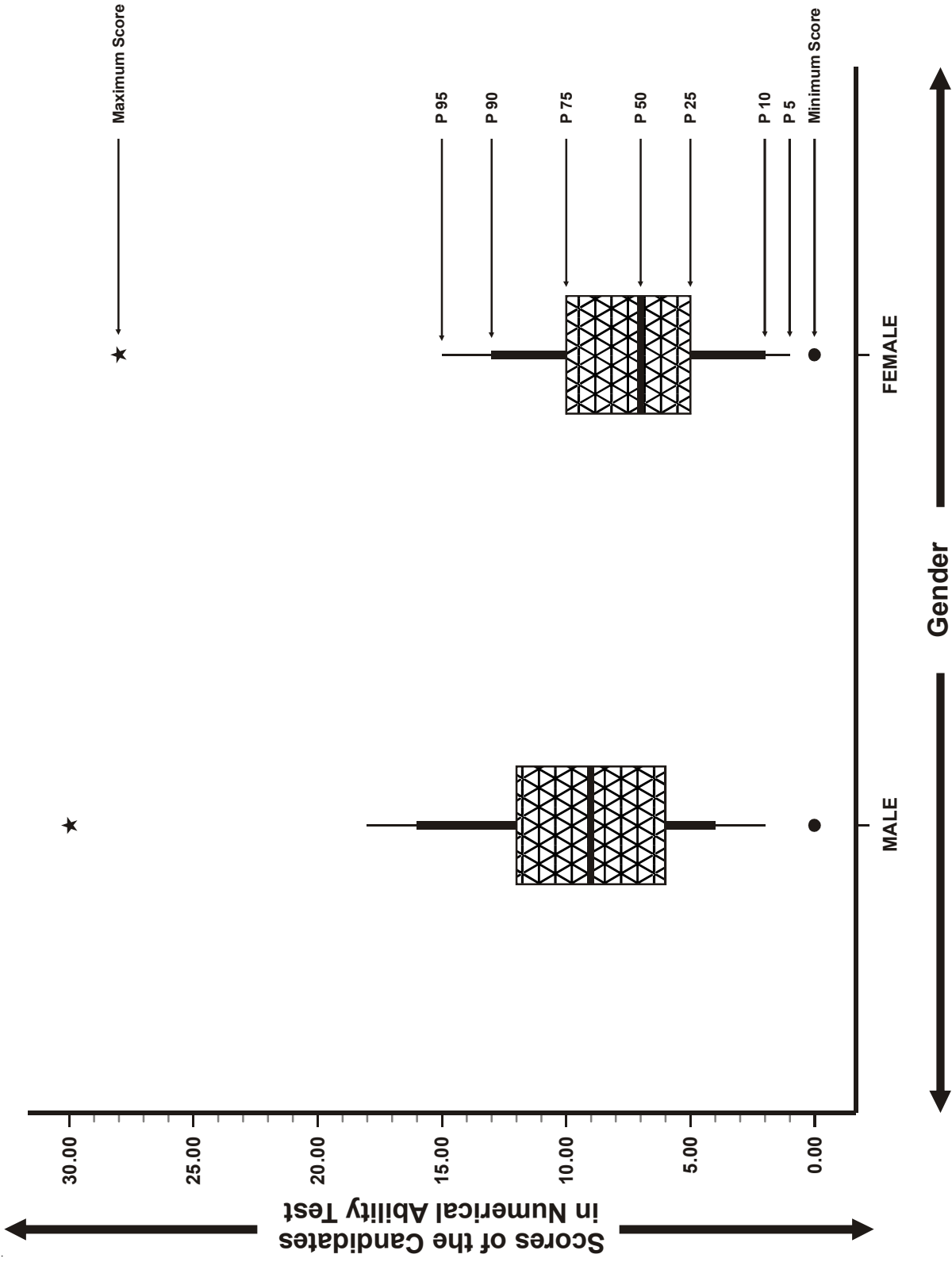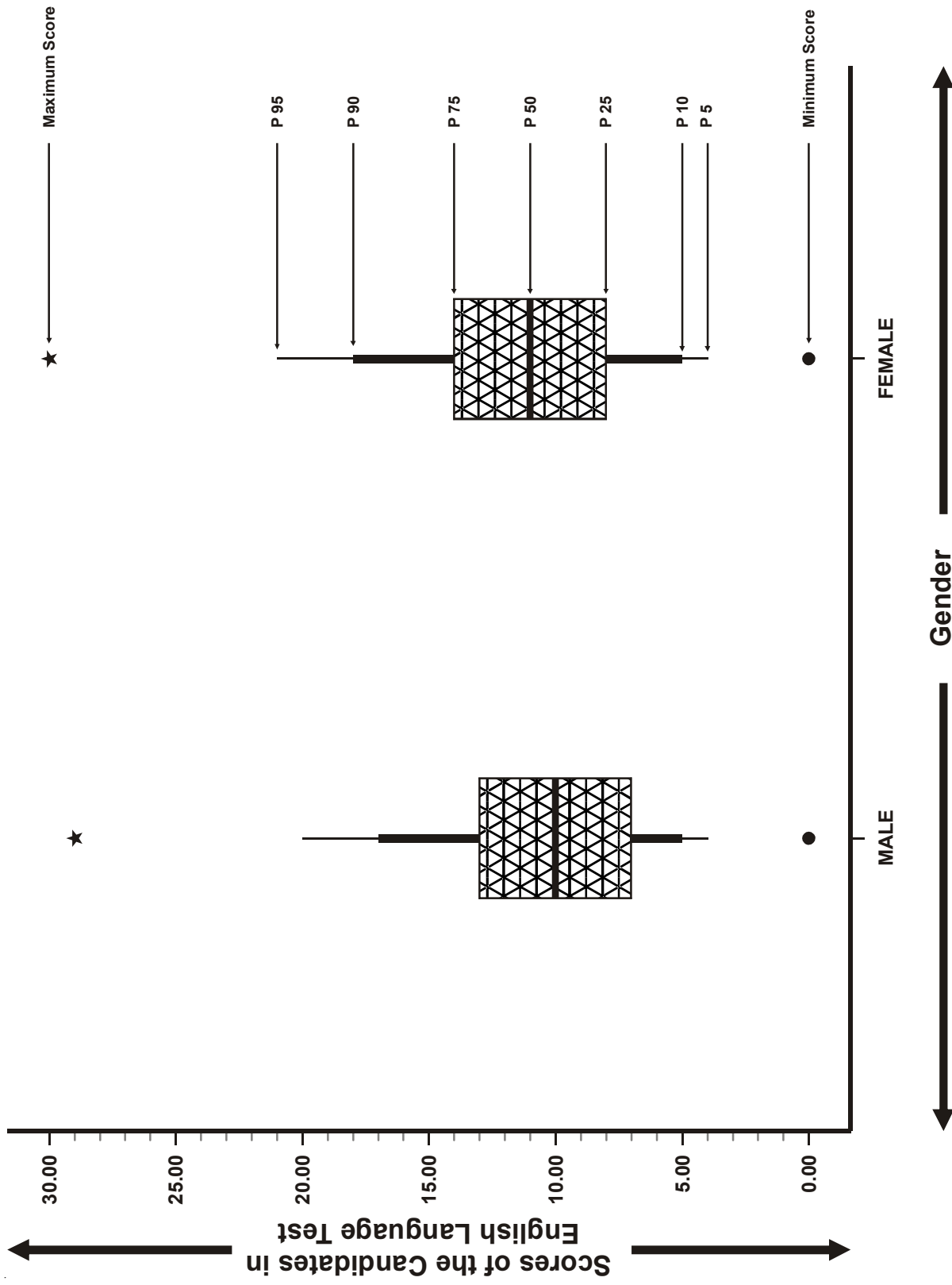
Fig. 15 - A graphic device for visual comparison of the scores of male and female candidates in the English Language Test showing some important centile values and total ranges

Chapter 5

Performance of the Candidates in the Examination *vis-a-vis* Marital Status

Out of the total number of 1,64,573 candidates who appeared in the examination and who had stated their marital status, 23272 (14.14%) were married while rest (85.86%) were unmarried. The frequency distributions of total scores of the married and unmarried candidates are given in Tables XXXI and XXXII respectively of Appendix-A. The means, standard deviations, skewnesses and value of 'Z' for the significance of difference between the means of married and unmarried candidates are given in Table 32 below:

Table 32

**Marital Statuswise Means, SDs, Skewness and 'Z' values
for Total Scores in the Examination**

Marital Status	N	Mean	SD	Skewness	'Z' Value	Remark
Married	23,272	43,872	12.131	0.251	12.034	Significant*
Unmarried	1,41,301	44.941	12.635	0.278	–	–

*Significant at 1% level.

We may observe from the above table that the mean score of the total scores of the unmarried candidates was significantly higher from the mean score of the total scores of the married candidates. The variability and skewness of the distribution of total scores of the unmarried candidates were also higher from the married candidates. This indicated that individual differences with respect to total scores amongst the unmarried candidates were higher from the married candidates and distribution of total scores of the former was much positively skewed than the later.

The percentile scores of the total score distributions of the married and unmarried candidates are given in Table 33 below:

Table 33

**Percentile Scores of the Married and Unmarried
Candidates for the Total Score Distributions**

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores	
		Married	Unmarried
95	95	65	67
90	90	60	62
80	80	53	55
75	75	51	53
70	70	49	51
60	60	46	47
50	50	43	44
40	40	41	41
30	30	38	38
25	25	36	36
20	20	34	35
10	10	29	30
5	5	25	25

It may be observed from the above table that percentile scores of the unmarried candidates at 50th point (median) and above, and at 10th and 20th points for total score distributions were higher from the married candidates. At the remaining points, however, they both have same percentile scores. Therefore, we may infer that performance of the unmarried candidates at median and above at least was better from the married candidates in the examination. A visual presentation of the comparison of the distributions of married and unmarried candidates showing important centile values and total ranges is given in Figure 16.

It is evident from Fig. 16 that the median, total range, range of middle 90 percent and range of middle 50 percent for the unmarried candidates are higher from the married candidates. As far as the top-most score of the two are concerned, the top-most scores of the unmarried candidates was also higher from the married candidates. Their bottom scores were, however, same.

Fig. 16 - A graphic device for visual comparison of the total scores of married and unarried candidates in the examination showing important centile values and total ranges

Performance in Reasoning Ability Test
vis-a-vis Marital Status

The frequency distributions of scores of the married and unmarried candidates in the test of Reasoning Ability are given in Tables XXXIII and XXXIV respectively of Appendix A. The means, standard deviations, skewnesses and value of 'Z' for the significance of difference between the means of married and unmarried candidates in Reasoning Ability Test are given in Table 34 below:

Table 34

**Marital Statuswise Means, SDs, Skewnesses and 'Z' Values in
Reasoning Ability Test Scores**

Marital Status	N	Mean	SD	Skewness	'Z' Value	Remark
Married	23,272	19.445	5.726	0.069	1.519	Not Sig.
Unmarried	1,41,301	15.508	5.881	0.069	–	–

We may observe from the above table that the mean scores of the married and unmarried candidates in Reasoning Ability Test were not significantly different. The same was true about the skewnesses of their distributions of scores though the standard deviation or the spread of scores was little higher for the unmarried candidates from the married candidates.

The percentile scores of the married and unmarried candidates in Reasoning Ability Test are given in Table 35 below:

Table 35

**Percentile scores of the Married and Unmarried Candidates
in Reasoning Ability Test**

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores	
		Married	Unmarried
95	95	29	29
90	90	27	27
80	80	24	24
75	75	23	23
70	70	22	22
60	60	21	21
50	50	19	19

(1) Centile Point	(2) Percentage below the centile point	(3) Percentile Scores	
		Married	Unmarried
40	40	18	18
30	30	16	16
25	25	16	16
20	20	15	15
10	10	12	12
5	5	10	10

We may observe from the above table that whatever was true in case of the mean scores of the married and unmarried candidates in Reasoning Ability Test, was also true in case of percentile scores of the married and unmarried candidates in Reasoning Ability Test at all the points. Hence, we may infer that marital status of the candidates did not influence their performance in Reasoning Ability Test.

A visual presentation of the comparison of the distributions of Reasoning Ability Test scores of married and unmarried candidates showing important centile values and total ranges is given in Figure 17.

It is evident from Fig. 17 that though the total range of Reasoning Ability Test scores is higher for the unmarried candidates from the married candidates yet the medians, ranges of middle 90 percent and ranges of middle 50 percent for both are same. As to the top-most scores, the top-most score for unmarried candidates is higher from married candidates. The bottom scores for both are same.

Performance in Numerical Ability Test
vis-a-vis Marital Status

The frequency distributions of the scores of the married and unmarried candidates in Numerical Ability Test are given in Tables XXXV and XXXVI respectively of Appendix-A. The means, standard deviations, skewnesses and values of 'Z' for the significance of the differences between the means are given in Table 36 below:
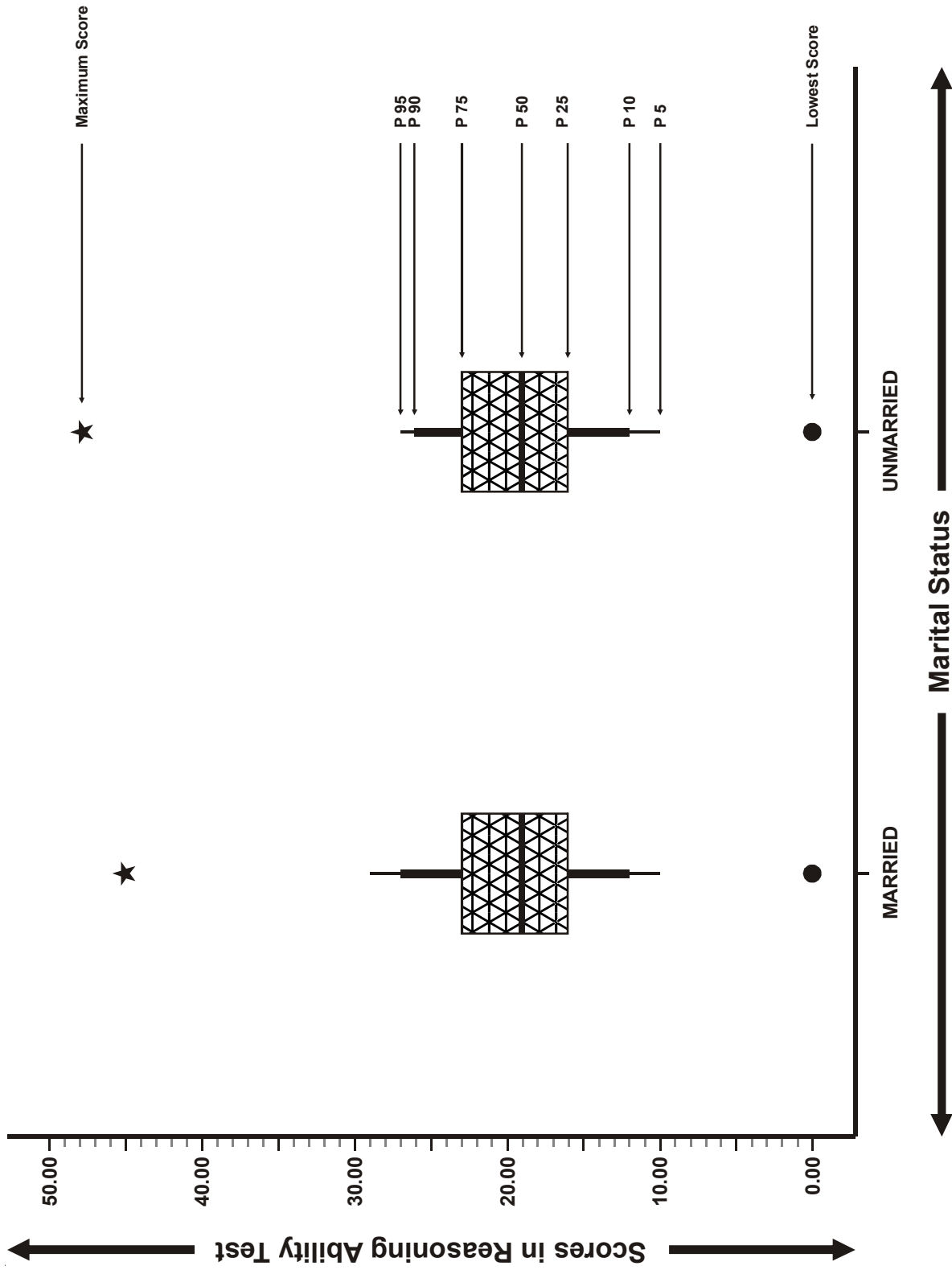
Fig. 17 - A graphic device for visual comparison of the scores of married and unmarried candidates in Reasoning Ability Test showing important centile values and total ranges

Table 36

**Marital Statuswise Means, SDs, Skewness and 'Z' Values
for Numerical Ability Test**

Marital Status	N	Mean	SD	Skewness	'Z' Value	Remark
Married	23,272	8.171	4.241	0.638	16.092	Significant*
Unmarried	1,41,301	8.681	4.517	0.629	–	–

*Significant at 1% level.

We may observe from the above table that the mean score of the unmarried candidates was significantly higher from the mean score of the married candidates in Numerical Ability Test. The value of SDs given in the above table indicated that the variability in the numerical ability scores amongst the unmarried candidates was higher from the married candidates but the skewness of the distribution for the former was lower than the later. We may, therefore, infer that the average performance of the unmarried candidates in Numerical Ability Test was better from the married candidates.

The percentile scores of the married and unmarried candidates in Numerical Ability Test are given in Table 37 below:

Table 37

**Percentile Scores of the Married and Unmarried
Candidates for Numerical Ability Test**

(1) Centile Point	(2) Percentage below	(3) Percentile Scores	
		Married	Unmarried
95	95	16	17
90	90	14	15
80	80	11	12
75	75	10	11
70	70	10	10
60	60	9	9
50	50	8	8
40	40	7	7
30	30	6	6

(1) Centile Point	(2) Percentage below	(3) Percentile Scores	
		Married	Unmarried
25	25	5	6
20	20	5	5
10	10	3	3
5	5	2	2

We may observe from the above table that percentile scores of the unmarried candidates in Numerical Ability Test at 75th point (Q_3) and above, and at 25th point (Q_1) were higher from the married candidates while at the remaining points percentile scores of both were same. Therefore, we may infer that the performance of the unmarried candidates in Numerical Ability Test was definitely better from the married candidates in the third quarter of the distributions of scores.

A visual presentation of the comparison of their distributions of scores in Numerical Ability Test showing important centile values and total ranges is given in Figure 18.

It is evident from Fig. 18 that though first quartile is higher for the unmarried candidates from the married candidates yet the medians for both are same. As far as the ranges of their distributions of scores are concerned, ranges of middle 90 percent and 80 percent for the unmarried candidates are higher from the married candidates. However, ranges of middle 50 percentage for both are same. As to the top-most scores, unmarried candidates have higher top-most score from the married candidates. The bottom scores for both are same.

Performance in General Knowledge and Awareness of Current Affairs Test *vis-a-vis* Marital Status

The frequency distributions of scores of the married and unmarried candidates in the test of General Knowledge and Awareness of Current Affairs Test are given in Tables XXXVII and XXXVIII respectively of Appendix-A. The means, standard deviations, skewnesses and 'Z' value for the significance of difference between the mean scores of these distributions are given in Table 38 below:
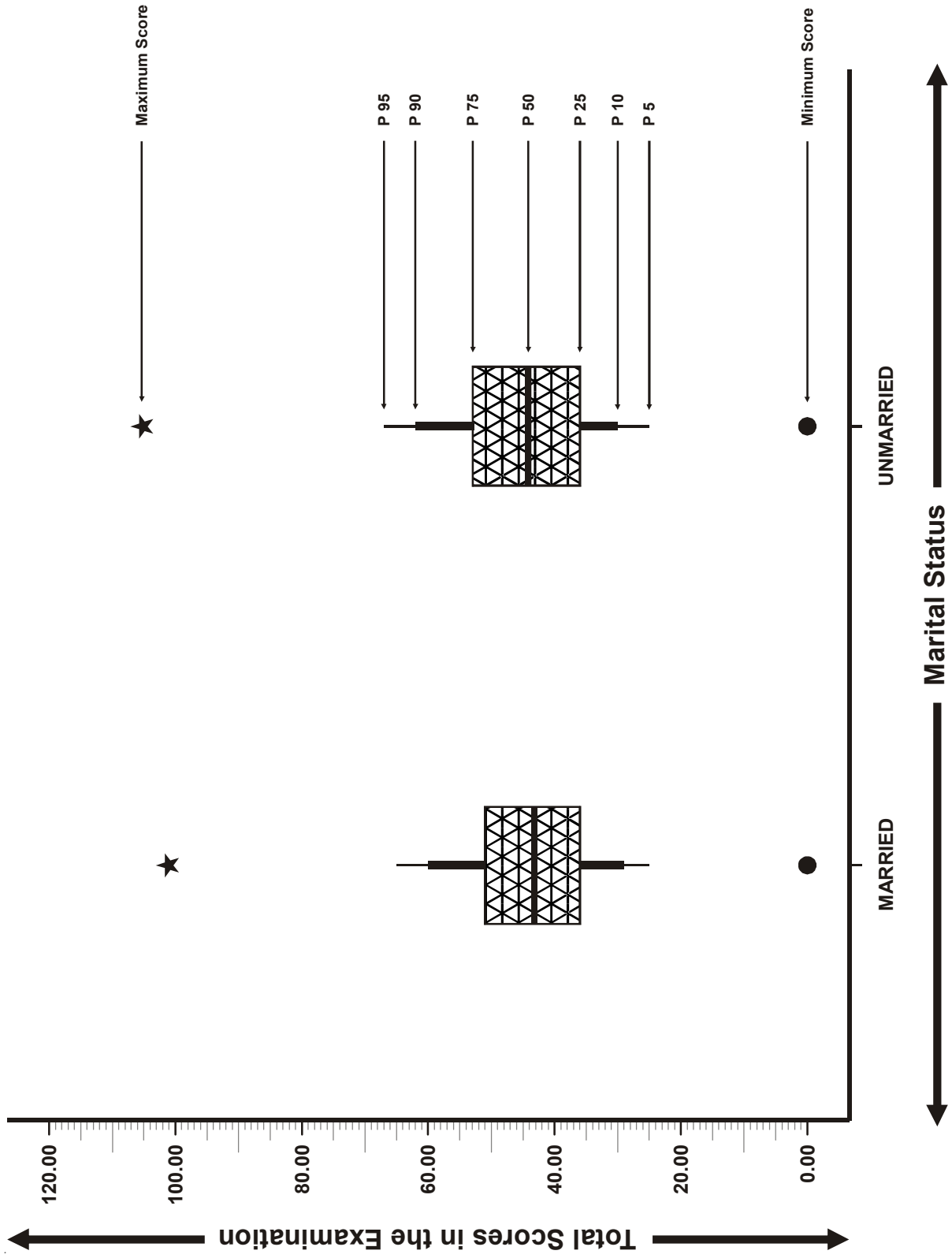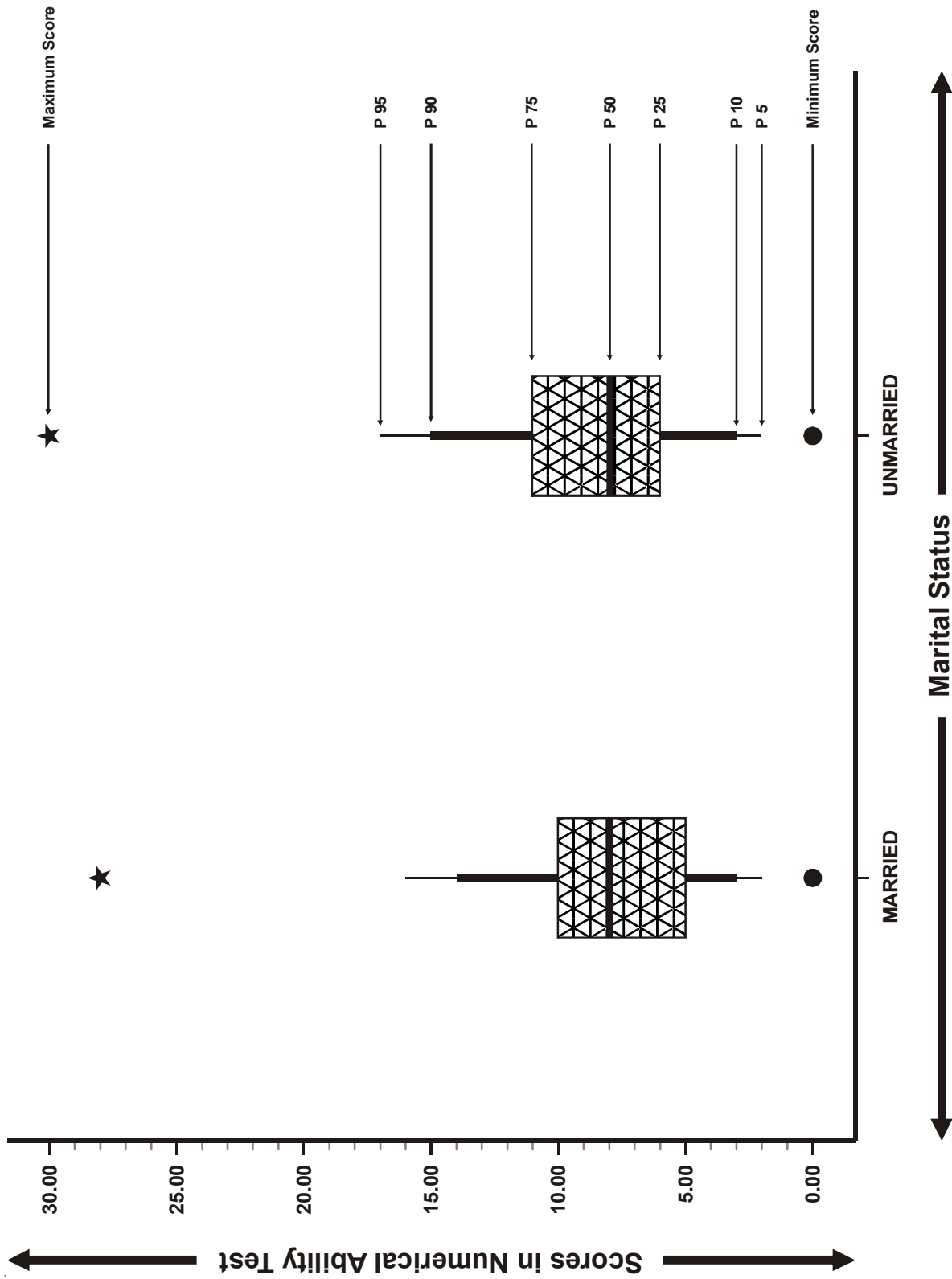
Fig. 18 - A graphic device for visual comparison of the scores of married and unmarried candidates in Numerical Ability Test showing important centile values and total ranges

Table 38

**Marital Statuswise Means, SDs, Skewnesses and 'Z' Value for
General Knowledge and Awareness of Current Affairs Test Scores**

Marital Status	N	Mean	SD	Skewness	'Z' Value	Remark
Married	23,272	5.698	4.868	0.293	6.511	Significant*
Unmarried	1,41,301	5.817	4.924	0.347	–	–

* Significant at 1% level.

The value of 'Z' given in the above table indicated that though the difference between the mean scores of the married and unmarried candidates was only 0.119 yet mean score of unmarried candidates was significantly higher from the mean score of the married candidates. The values of standard deviations and skewnesses given in the above table indicated that variation among the scores of unmarried candidates was also more than the married candidates and distribution of scores of the former was also more positively skewed than the distributions of scores of the later.

The percentile scores of the married and unmarried candidates in General Knowledge and Awareness of Current Affairs Test are given in Table 39 below:

Table 39

**Percentile Scores of the Married and Unmarried Candidates in
General Knowledge and Current Affairs Test**

(1) Centile Point	(2) Percentage below	(3) Percentile Scores	
		Married	Unmarried
95	95	10	10
90	90	9	9
80	80	8	8
75	75	7	7
70	70	7	7
60	60	6	6
50	50	6	6
40	40	5	5
30	30	4	4
25	25	4	4
20	20	4	4
10	10	3	3
5	5	2	2

We may observe from the above table that percentile scores of the married and unmarried candidates in General Knowledge and Current Affairs Test at all centile points were same. Therefore, we may infer that the performance of both the groups of candidates was same in General Knowledge and Awareness of Current Affairs Test.

A visual presentation of the comparison of the distributions of scores of married and unmarried candidates in General Knowledge and Current Affairs Test showing important centile values and total ranges is given in Figure 19.

It may be observed from Fig. 19 that the medians, total ranges, ranges of middle 90 perecnt and ranges of middle 50 percent were same for both the groups candidates. None-the-less their top-most and bottom scores were also same. Hence, we may infer that marital status of the candidates did not influence their performance in General Knowledge and Awareness of Current Affairs Test.

Performance in English Language Test
vis-a-vis **Marital Status**

The frequency distribution of scores of the married and unmarried candidates in the test of English Language are given in Tables XXXIV and XXXX respectively of Appendix A. The means, standard deviations, skewnesses of these distributions and value of 'Z' for the significance of difference between the means are given in Table 40 below:

Table 40

**Marital Statuswise Means, SDs, Skewnesses and 'Z' Value
for English Language Test**

Marital Status	N	Mean	SD	Skewness	'Z' Value	Remark
Married	23,272	10.558	4.868	0.522	10.852	Significant*
Unmarried	1,41,301	10.936	4.924	0.479	–	–

*Significant at 1% level.

We may observe from the above table that average performance of the unmarried candidates was significantly higher from the average performance of the married candidates. The value of standard deviations given in the above table indicated that variation amongst the unmarried candidates in terms of their scores in English Language Test was more than the married candidates but distribution of scores of the former was less positively skewed than the distribution of scores of the later. The percentile scores of the married and unmarried candidates in English Language Test are given in Table 41 below:
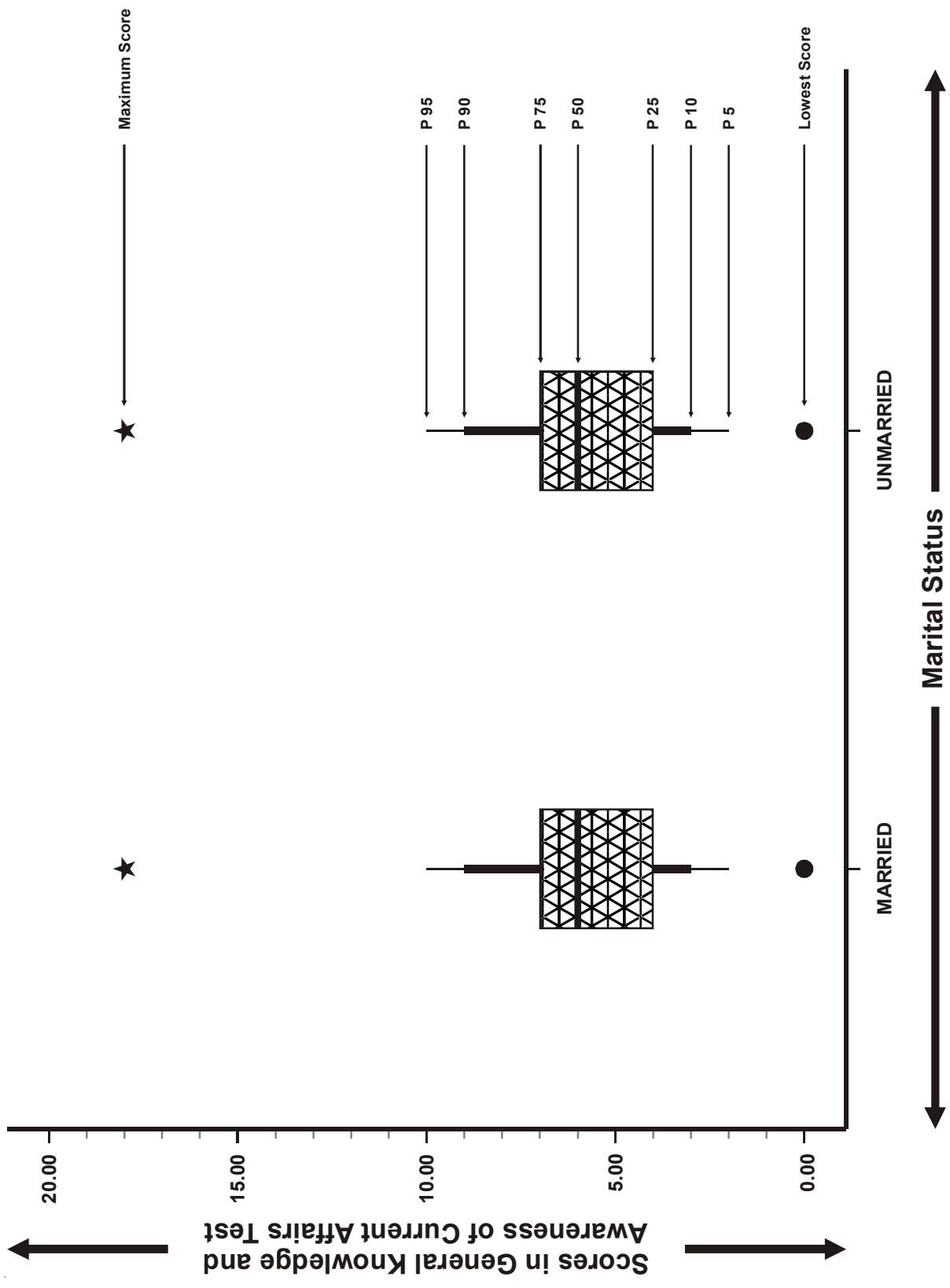
Fig. 19 - A graphic device for visual comparison of the scores of married and unmarried candidates in General Knowledge and Awareness of 0Current Affairs Test showing important centile values and total ranges

Table 41

**Percentile scores of the Married and Unmarried Candidates
in English Language Test**

(1) **Centile Point**	(2) **Percentage below**	(3) **Percentile Scores**	
		Married	**Unmarried**
95	95	20	20
90	90	17	18
80	80	14	15
75	75	13	14
70	70	12	13
60	60	11	12
50	50	10	10
40	40	9	9
30	30	8	8
25	25	7	8
20	20	7	7
10	10	5	5
5	5	3	4

We may observe from the above table that percentile scores of the unmarried candidates in English Language Test at 5th and 25th points, and from 60th to 90th point were higher from the married candidates while at the remaining points both had same percentile scores. We may, therefore, infer that performance of the unmarried candidates in English Language Test to some extent was better than the married candidates.

A visual presentation of the comparison of the distributions of scores of the married and unmarried candidates in English Language Test showing important centile values and total ranges is given in Figure 20.

We may observe from Fig. 20 that while medians and ranges of middle 50 percent for the married and unmarried candidates are same, the total range and range of middle 80 percent for the unmarried candidates are higher from the married candidates. As to the top-most scores, unmarried candidates have higher top-most score from the married candidates. The bottom scores for both are same.
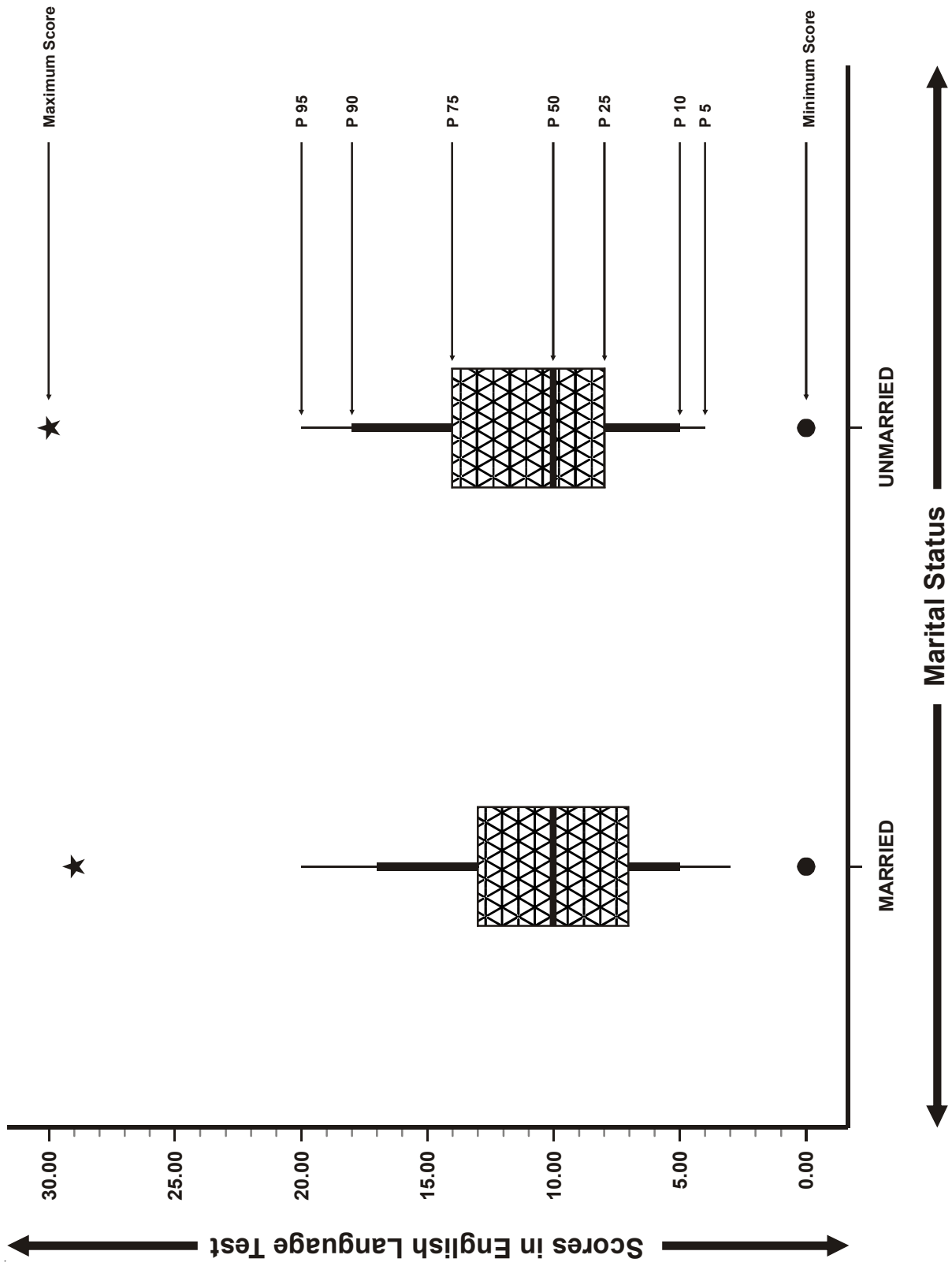
Fig. 20 - A graphic device for visual comparison of the scores of married and unarried candidates in English Language Test showing important centile values and total ranges

Overall

From the foregoing discussion, we may conclude that the average performance of the married candidates in the Examination, Numerical Abilty Test, General Knowledge and Awareness of Current Affairs Test, and English Language Test was significantly higher from the married candidates. The percentile scores which are not influenced by the skewness of the distribution of scores indicated that performance of the unmarried candidates in the Examination was better from the married candidates at 50th point (median) and above, in Numerical Ability Test at 75th point (Q_3) and above, and in English Language Test at 5th and 25th points, and from 60th to 90th point while in Reasoning Ability Test and General Knowledge and Awareness of Current Affairs Test performance of the candidates was not influenced by their marital status. Moreover, at none of the point performance of the unmarried candidates in the Examination and individual tests was lower than the married candidates.

Chapter 6

Performance in the Examination
vis-a-vis Different Age Groups

The minimum age required for the posts was 21 years (completed) as on 1 March, 2009 and the maximum age was 30 years. There was relaxation in upper age for SC/ST/OBC/ECO/ SSRCO/Persons with disabilities/confirmed LIC employees as under:

SC/ST	5 years
OBC	3 years
PH (Gen.)	10 years
PH (SC/ST)	15 years
PH (OBC)	13 years
ECO/SSRCO (GEN.)	5 years
ECO/SSRCO (SC/ST)	10 years
SCO/SSRCO (OBC)	8 years
Confirmed LIC employees	Further relaxation of 5 years

For brevity and ease in intrepretation of the data, we classified the candidates into four age groups i.e. 25 years and below, 26 to 30 years, 31 to 35 years, and 36 years and above.

Out of a total number of 1,64,608 candidates, 35 candidates were not eligible, hence the data was tabulated for 1,64,573 candidates only. Out of 1,64,573 candidates, 69754 (42.4%) were of the age of 25 years and below, 80742 (49%) were 26 years to 30 years of age, 13410 (8.2%) were between 31 to 35 years of age and 667 (0.4%) were of the age of 36 years and above. The frequency distribution of total scores of the candidates of these age groups in the examination are given in Table XXXXI to Table XXXXIV of Appendix A. The means and standard deviations of these frequency distributions and Fisher's 'F' value for the significance of means are given in Table 42 below:

Table 42

Age Groupwise Means, SDs and F-Value for the Significance of Difference Between Means

Age Group	N	Mean	SD	F-value	Remark
25 years and below	69754	44.41	12.46	43.52	Significant*
26-30 years	80742	45.04	12.66		
31-35 years	13410	45.32	12.59		
36 years and above	667	43.22	11.57		

*Significant at 5% level.

We may observe from the above table that mean of the candidates of the age group of 36 years and above i.e. eldest was lower than the mean of the candidates of other three age groups and mean of the candidates of the age groups of 31-35 years was higher than the candidates of other age groups. This indicated that average performance of the candidates of the age group of 31-35 years was better than the candidates of other age groups and candidates of eldest age group were poor in their average performance from the younger ones.

Percentile scores of the total scores of candidates of different age groups in the examination are given in Table 43 below.

Table 43

Percentile Scores of the Total Scores of the Candidates of Different Age Groups in the Examination

(1) Centile Point	(2) Percentage below	(3) Percentile Scores			
		25 years and below	26-30 years	31-35 years	36 years and above
95	95	66	67	68	63
90	90	61	61	62	58
80	80	55	55	56	52
75	75	52	53	53	50
70	70	50	51	51	49
60	60	47	47	47	45
50	50	44	44	44	43
40	40	41	41	42	40
30	30	38	38	39	38

(1) Centile Point	(2) Percentage below	(3) Percentile Scores			
		25 years and below	26-30 years	31-35 years	36 years and above
25	25	36	37	37	36
20	20	34	35	35	34
10	10	29	30	30	30
5	5	25	25	26	26

We may observe from the above table that the percentile scores of the total scores of the eldest group of candidates of 36 years and above age, at 40th and above points were lower than the candidates of other three age groups while the candidates of the age group of 31-35 years either had higher or same percentile scores at all the points from the candidates of other age groups. We may, therefore, infer that the performance of the eldest group of candidates at 40th point and above was consistently poor than the candidates of younger age groups.

A visual presentation of the comparison of the distributions of total scores of the candidates different age groups in the examination showing important centile values and total ranges is given in Figure 21.

In Figure 21, while the median of the candidates of the age group of 36 years and above is lower than the medians of the candidates of other three age groups. Though the candidates of the later age three groups have same medians. The total range, range of middle 90 percent and range of middle 50 percent for the candidates of the age group of 36 years and above are also lower than the total ranges, ranges of middle 90 percent and ranges of middle 50 percent of the candidates of other three age groups. Though these ranges for the candidates of the later three groups are also same. The top-most score for the candidates of the age group of 36 years and above is also lower from the top-most scores of the other three age groups while the top-most score for the candidates of the age group of 31-35 years is maximum. The candidates of the age groups of 25 years and below, and 26-30 years have same top-most scores. The bottom scores of the candidates of all the age groups are equal. We may, therefore, infer that the performance of the candidates of the age group of 31-35 years was better than the candidates of other age groups and candidates of the age group of 36 years and above had lower performance than the candidates of other three age groups.
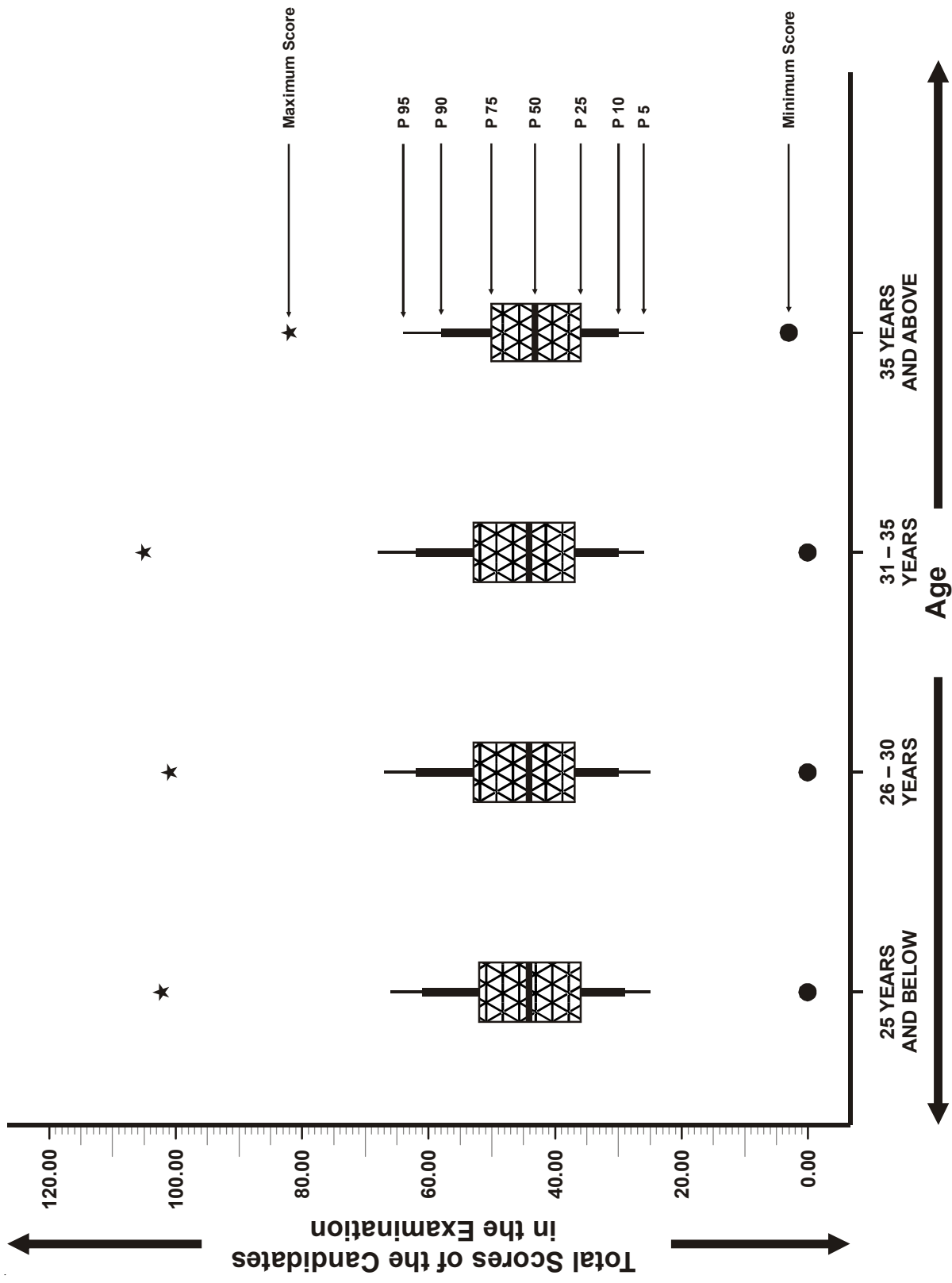
Fig. 21 - A graphic device for visual comparison of the total scores of the candidates of four age groups
showing important centile values and total ranges

Performance in Reasoning Ability Test
vis-a-vis Different Age Groups

Age groupwise frequency distribution of scores in the test of Reasoning Ability are given in Appendix A from Table XXXXV to Table XXXXVIII. The means, standard deviations of these distributions and F-value for the significance of means are given in Table 44 below:

Table 44

**Age Groupwise Means, SDs and F value for Significance of Difference
Between Means in Reasoning Ability Test**

Age Group	N	Mean	SD	F-value	Remark
25 years and below	69754	19.61	5.93	20.66	Significant*
26-30 years	80742	19.44	5.82		
31-35 years	13410	19.34	5.72		
36 years and above	667	18.55	5.31		

*Significant at 5% level.

It may be observed from the above table, that the means of candidates of the four age groups differ significantly in Reasoning Ability Test. Further, a decreasing trend in the means with increase in age with younger ones having higher mean from the elder ones, was observed from the above table.

Percentile scores of the candidates of the different age groups in Reasoning Ability Test are given in Table 45 below:

Table 45

Age Groupwise Percentile scores of the Candidates in Reasoning Ability Test

(1) Centile Point	(2) Percentage below	(3) Percentile Scores			
		25 years and below	26-30 years	31-35 years	36 years and above
95	95	30	29	29	27
90	90	27	27	27	25
80	80	25	24	24	23
75	75	24	23	23	22

(Contd. on next page)

(1) Centile Point	(2) Percentage below	(3) Percentile Scores			
		25 years and below	26-30 years	31-35 years	36 years and above
70	70	23	22	22	21
60	60	21	21	21	20
50	50	19	19	19	18
40	40	18	18	18	17
30	30	16	16	16	16
25	25	16	16	16	15
20	20	15	15	15	14
10	10	12	12	12	12
5	5	10	10	10	10

We may observe from the above table that percentile scores of the candidates of 36 years and above age in Reasoning Ability Test at 20th point and above except at 30th point were lower than the percentile scores of the candidates of other age groups. At the remaining points also, percentile scores of the candidates of the age group of 36 years and above were not higher than the percentile scores of the candidates of other age groups. We may, therefore, infer that the candidates of the age group of 36 years and above had lower performance from the candidates of other age groups. We may, further, observe from the above table that percentile scores of the candidates of the age group of 25 years and below at 70th, 75th, 80th and 95th points were higher from the candidates of the age groups of 26-30 years and 31-35 years while at the remaining points their percentile scores were same as of the candidates of two later groups. Candidates of the age groups of 26-30 years and 31-35 years however had same percentile scores at all the points. We may, therefore, infer that to some extent performance of the candidates of the age of 25 years and below was better than the performance of the candidates of age groups of 26-30 years and 31-35 years who had same performance. The distributions of scores of the candidates of different age groups in Reasoning Ability Test showing important centile values and total ranges are given in Figure 22.

In Fig. 22, medians of the age groups of 25 years and below, 26 to 30 years, and 31 to 35 years are equal and median of the age group 36 years and above is lower than them. The total ranges of the four age groups are in the order 1, 2, 3 and 4 for 25 years and below, 26-30 years, 31-35 years, and 36 years and above. The range of middle 90 percent is maximum for the age group 25 years and below and minimum for the age group of 36 years and above while ranges of middle 90 percent for the age groups of 26-30 years and 31-35 years are equal. The ranges of middle 80 percent are equal for the age groups 25 years and above, 26-30 years, and 31-35 years while for
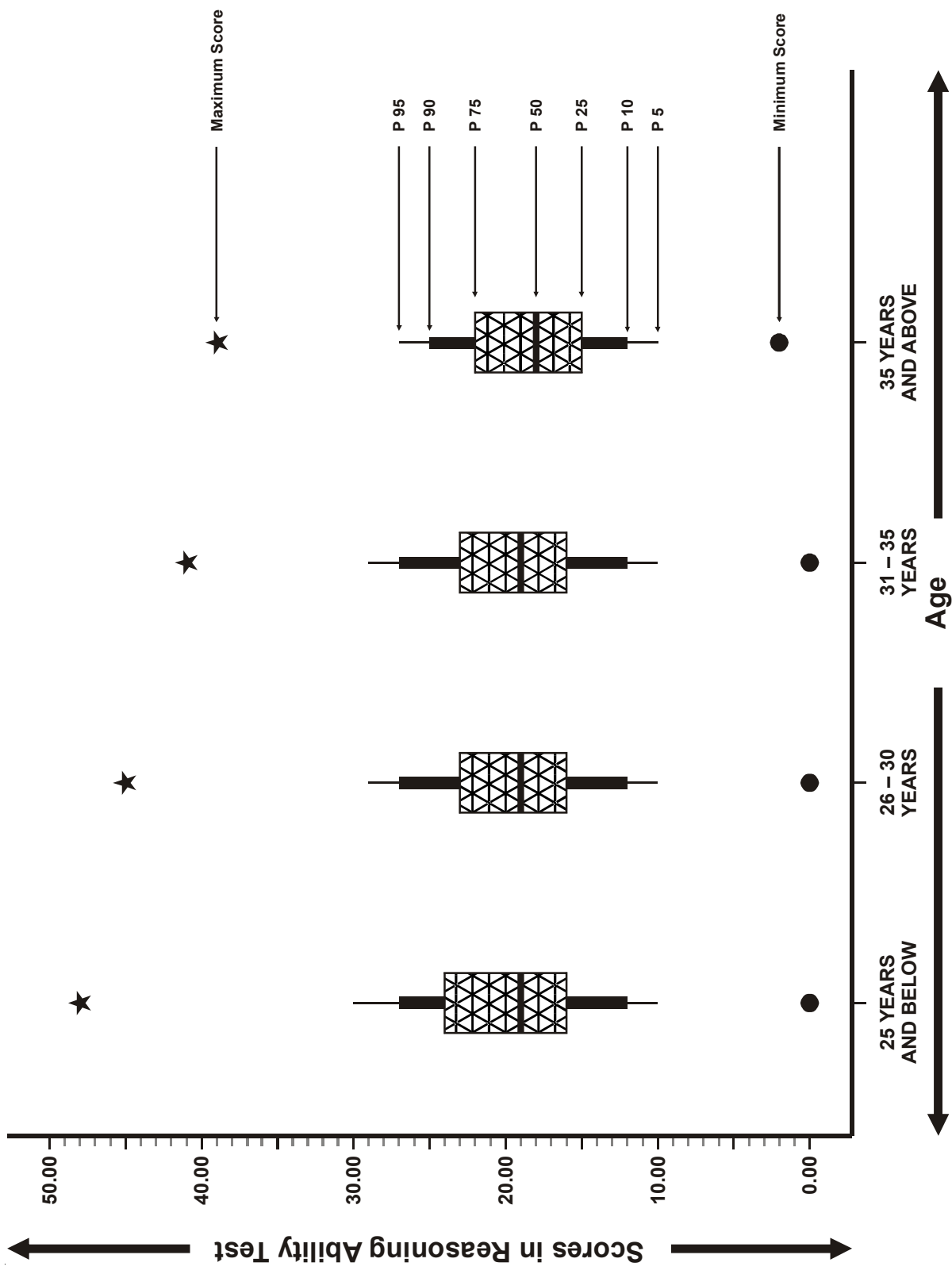
Fig. 22 - A graphic device for visual comparison of the scores of the candidates of different categories in Reasoning Ability Test showing important centile values and total ranges

the age groups 36 years and above, the range of middle 80 percent is lower than them. The ranges of middle 50 percent for 26-30 years, 31-35 years and 36 years and above are equal but the range of middle 50 percent for the age group 25 years and below is higher from them. The top-most scores are also in the order 1, 2, 3 and 4 for 25 years and above, 26-30 years, 31-35 years, and 36 years and above respectively but their bottom scores are equal.

Performance in Numerical Ability Test
vis-a-vis Different Age Groups

The frequency distributions of the candidates of different age groups in Numerical Ability Test are given in Appendix A from Tables XXXXIX to Table XXXXXII. The means, standard deviations of these distributions and F value for the significance means are given in Table 46 below:

Table 46

**Agewise Means, SDs and F Value for Significance of Means Between
Different Age Groups in Numerical Ability Test Scores**

Age Group	N	Mean	SD	F-value	Remark
25 years and below	69754	8.57	4.47	9.73	Significant
26-30 years	80742	8.64	4.50		
31-35 years	13410	8.69	4.42		
36 years and above	667	7.90	3.75		

It may be observed from the above table that though the differences between the means of the three lower age groups were not very high yet the overall differences between the means of the four age groups were significant. It may also be observed from the above table that the candidates of the age group of 36 years and above had lower mean score from the candidates of other age groups and candidates of the age group of 31-35 years had higher mean score from the candidates of other age groups. We may, therefore, infer that the eldest group of candidates were poor performer on the average in Numerical Ability Test from the candidates of other age groups while candidates of the age group of 31-35 years were best performer on the average in comparison to the candidates of other age groups.

Percentile scores of the candidates of different age groups are given in Table 47 below:

Table 47

**Age Groupwise Percentile scores of the Candidates
in Numerical Ability Test**

(1) Centile Point	(2) Percentage below	(3) Percentile Scores			
		25 years and below	26-30 years	31-35 years	36 years and above
95	95	17	17	17	14
90	90	15	15	15	12
80	80	12	12	12	11
75	75	11	11	11	10
70	70	10	10	10	10
60	60	9	9	9	8
50	50	8	8	8	8
40	40	7	7	7	7
30	30	6	6	6	6
25	25	6	6	6	6
20	20	5	5	5	5
10	10	3	3	4	3
5	5	2	2	2	2

We may observe from the above table that percentile scores of the candidates of the age group 36 years and above in Numerical Ability Test at 75th point and above were lower from the candidates of other age groups while below 40th point percentile scores of candidates of four age groups were same. Moreover, candidates of the age groups of 25 years and below, 26-30 years and 31-35 years had the percentile scores at all the points except at 10th point where candidates of the age of group 31-35 years had higher percentile score from the candidates of other age groups.

A visual presentation of the comparison of the distributions of scores of the candidates of different age groups in Numerical Ability Test showing important centile values and total ranges is given in Figure 23.

In Figure 23, the medians of the four age-groups are same. The total ranges of the candidates of 25 years and below, 31 to 35 years, and 36 years and above are almost same but the total range of the candidates of the age 26 to 30 years, is higher from them. As to the range of middle 90 percent, it is same for the candidates of three younger age groups but the eldest group of 36 years and above has lower range of middle 90 percent from younger ones. The ranges of
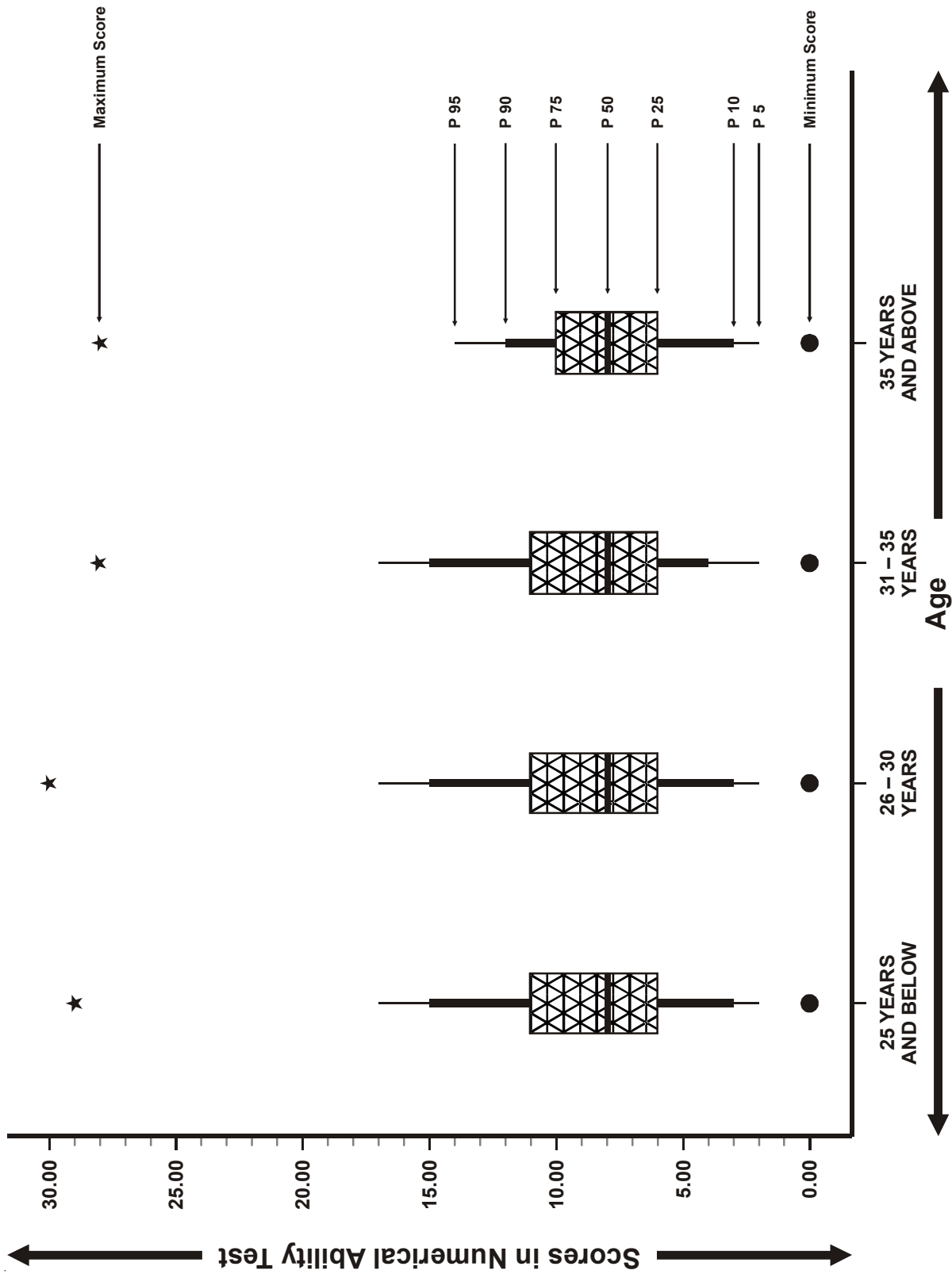
Fig. 23 - A graphic device for visual comparison of the scores of the candidates of four age groups in Numerical Ability Test showing important centile values and total ranges

middle 50 percent are also same for the candidates of three younger age groups but the candidates of eldest age group has lower range of middle 50 percent from them. We may, therefore, infer that performance of the candidates of the age group of 36 years and above at the third quartile and above was lower from the candidates of the age groups of 25 years and below, 26-30 years, and 31-35 years and above while candidates of the three later age groups had same performance at all the points in Numerical Ability Test.

Performance in General Knowledge and Awareness of Current Affairs Test *vis-a-vis* Different Age Groups

The age groupwise frequency distributions of the scores of the candidates in General Knowledge and Current Affairs Test are given in Appendix A from Table XXXXXIII to Table XXXXXVI. The means, standard deviations of these distributions and F value for the significance of differences between the means of the four age groups are given in Table 48 below:

Table 48

Age Groupwise Means, SDs and F value for the Significance of Differences between Means for General Knowledge and Awareness of Current Affairs Test Scores

Age Group	N	Mean	SD	F-value	Remark
25 years and below	69754	5.40	2.45	1184.55	Significant
26-30 years	80742	6.01	2.63		
31-35 years	13410	6.60	2.73		
36 years and above	667	6.44	2.56		

It is evident from the above table that the candidates of two elder groups of ages 31-35 years, and 36 years and above had higher mean scores from the candidates of two younger groups of ages 25 years and below, and 26-30 years. However, candidates of the eldest group of age 36 years and above had lower mean score from the candidates of 31-35 years of age. The values of standard deviations given in the above table indicated that the variability amongst the scores of the candidates of age 31-35 years was maximum while amongst the candidates of age group 25 and below, it was minimum.

The percentile scores of the candidates of four age groups in General Knowledge and Awareness of Current Affairs Test are given in Table 49 below:

Table 49

Age Groupwise Percentile Scores of the Candidates of Different Age Groups in General Knowledge and Awareness of Current Affairs Test

(1) Centile Point	(2) Percentage below	(3) Percentile Scores			
		25 years and below	26-30 years	31-35 years	36 years and above
95	95	10	11	11	11
90	90	9	9	10	10
80	80	7	8	9	9
75	75	7	8	8	8
70	70	7	7	8	8
60	60	6	6	7	7
50	50	5	6	6	6
40	40	5	5	6	6
30	30	4	5	5	5
25	25	4	4	5	5
20	20	3	4	4	4
10	10	2	3	3	3
5	5	2	2	2	2

We may observe from the above table that percentile scores of the candidates of the age 25 years and below in General Knowledge and Awareness of Current Affairs Test at 10th, 20th, 30th, 50th, 75th and 95th points were lower than the candidates of remaining three age groups which had same percentile scores at these points. The percentile scores of the candidates of the ages 25 years and below, and 26-30 years at 25th, 40th, 60th, 70th and 90th points in General Knowledge and Awareness of Current Affairs Test were same but they were lower than the percentile scores of the candidates of the ages 31-35 years, and 36 years and above which had same percentile scores at these points. The percentile score of the candidates of the age group 25 years and below at 80th point was lower than the percentile scores of the candidates of the age groups 26-30 years, 31-35 years, and 36 years and above, while the later two age groups also had same percentile scores at this point. The percentile scores of the candidates of the four age groups at 5th point were same. We may, therefore, infer that by and large the candidates of the youngest age group of 25 years and below were poor in General Knowledge and Awareness of Current Affairs Test from the candidates of other three age groups.

A visual presentation of the distributions of scores of the candidates of the four age groups in General Knowledge and Awareness of Current Affais Test showing important centile values and total ranges is given in Figure 24.

In Figure 24 while the medians of the candidates of three elder groups are same, the median for the candidates of the youngest group of age 25 years and below, is lower than them. As to the total ranges, the candidates of age 26-30 years and 31-35 years have same total ranges which are higher from the total ranges of the candidates of ages 25 years and below, and 36 years and above. The candidates of age 36 years and above has lowest total range. As to the ranges of middle 95 percent, candidates of the youngest group of age 25 years and below has lowest range of middle 95 percent from the candidates of the remaining three age groups which have same ranges of middle 95 percent. The range of middle 50 percent is higher for the candidates of the age group 26-30 years from the candidates of the age groups of 25 years and below, 31-35 years, and 36 years and above which have same ranges of middle 50 percent. As to the top-most score, candidates of the group of 26-30 year and 31-35 year have same top-most scores which are higher from the top-most scores of the candidates of other two age groups of 25 year and below, and 36 year and above whie candidates of the age group of 36 year and above has lower top-most score than other three age groups. The bottom scores of the four age groups are same.

Performance in English Language Test
vis-a-vis Different Age Groups

The age groupwise frequency distributions of the scores of the candidates in English Language Test are given in Appendix A from Table XXXXXVII to XXXXXX. The means, standard deviations of these distributions and F-value for the significance of differences between means of the four age groups are given in Table 50 below:

<p align="center">Table 50</p>

<p align="center">Age Groupwise Means, SDs and F value for the Significance of Difference
Beteween Means for English Language Test Scores</p>

Age Group	N	Mean	SD	F-value	Remark
25 years and below	69754	10.83	4.88	18.71	Significant
26-30 years	80742	10.96	4.95		
31-35 years	13410	10.70	4.89		
36 years and above	667	10.33	4.99		

It may be observed from the above table that the mean of the eldest group of candidates of 36 years and above age was lower than the means of candidates of the remaining three age groups

Fig. 24 - A graphic device for visual comparison of the scores of the candidates of the four age groups in General Knowledge and Awareness of Current Affairs Test showing important centile values and total ranges

but the standard deviation in case of the former was higher from the later. This indicated that though the overall performance of the candidates of the age 36 years and above in English Language Test was poor from the candidates of other three age groups yet the variation amongst them in terms of their scores was more than the later.

Percentile scores of the candidates of the four age groups in English Language Test are given in Table 51 below:

Table 51

**Age Groupwise Percentile Scores of the Candidates of Four Age Groups
in English Language Test**

(1) Centile Point	(2) Percentage below	(3) Percentile Scores			
		25 years and below	26-30 years	31-35 years	36 years and above
95	95	20	20	20	20
90	90	18	18	18	17
80	80	15	15	15	14
75	75	14	14	13	13
70	70	13	13	13	12
60	60	11	12	11	11
50	50	10	10	10	9
40	40	9	9	9	8
30	30	8	8	8	7
25	25	8	8	7	7
20	20	7	7	7	6
10	10	5	5	5	5
5	5	4	4	4	4

It may be observed from the above table that candidates of the eldest age group of 36 years and above had lower percentile scores from the candidates of other three age groups in English Language Test at 20th, 30th, 40th, 50th, 70th, 80th and 90th points while the candidates of later three age groups had same percentile scores at these points. It was also observed from the above table that the candidates of two elder groups of the ages 31-35 year, and 36 years and above had same but lower percentile scores at 25th and 75th points from the candidates of two younger groups of the ages 25 years and below, and 26-30 years which also had same percentile scores at these points. Percentile scores at 5th and 10th points of the candidates of the four age groups were same. We may, therefore, infer that eldest group of candidates in general, had poor

performance in English Language Test from the younger groups of candidates. A visual presentation of distribution of four age groups in English Language Test showing important centile values and total ranges is given in Figure 25.

In Fig. 25, the eldest group of candidates of age 36 year and above has lower median from the medians of the candidates of other three age groups which have almost same medians. As to the total ranges, candidates of the eldest group of age 36 year and above had lower total range from the total ranges of the candidates of other three age groups which have almost same total ranges. The ranges of the middle 90 percent and ranges of middle 50 percents for the candidates of four age groups are almost same. As to the top-most score, the top-most score of candidates of the age group of 36 years and above is lower than the top-most score of the candidates of other three age groups. The bottom scores of the candidates of four age-groups are same.

We may, therefore, infer that the performance of the eldest group candidates of age 36 years and above was lower than the candidates of other three age groups while candidates of later three age groups had almost same performance in English Language Test.

Overall

It is apparent from the foregoing discussion that as far as the average performance of the candidates in the examination (total score) is concerned, it was maximum for the candidates of the age group of 31-35 year and minimum for the candidates of the age group of 36 year and above while candidates of the age group of 26-30 years had better average performance from the candidates of the age group of 25 year and below. In Reasoning Ability Test, the youngest candidates of the age group of 25 year and below had maximum average performance while eldest candidates of the age group of 36 year and above had minimum average performance and candidates of the age group of 26-30 year had better average performance from the candidates of the age group of 31-35 year. In Numerical Ability Test candidates of the age group of 31-35 year had maximum average performance while candidates of the age group of 36 year and above had minimum average performance and candidates of the age group of 26-30 year had better average performance from the candidates of the age group of 25 years and below. In General Knowledge and Current Affairs Test candidates of the age group of 31-35 years had maximum average performance while youngest candidates of the age of 25 year and below had minimum average performance and average performance of the candidates of the age group of 36 year and above was better from the average performance of the candidates of the age group of 26-30 year. In English language Test candidates of the age group of 26-30 year had maximum performance while candidates of the age group 36 year and above had minimum average performance and candidates of the age group of 25 year and below had better average performance from the candidates of the age group of 31-35 year. Therefore, we may conclude that the average

performance of the eldest group of candidates of 36 years and above was minimum in the Examination (total scores), Reasoning Ability Test, Numerical Abilty Test and English Language Test, and candidates of the age group of 31-35 years had maximum average performance in the examination, Numerical Ability Test and General Knowledge and Awareness of Current Affairs Test. Candidates of the age group of 25 years and below had maximum average performance in Reasoning Ability Test but minimum average performance in General Knowledge and Awareness of Current Affairs Test. Candidates of the age group of 26-30 year had maximum average performance in English Language Test only but in the examination and Numerical Ability Test their average performance was higher from the candidates of the age group of 25 year and below while in Reasoning Ability Test their average performance was higher than the candidates of the age group of 31-35 year.

The percentile scores of the candidates of four age groups indicated that the eldest group of candidates of age 36 year and above had poor perfromance from the candidates of other three age groups at 40th point and above in the examination, at 20th point and above in Reasoning Ability Test, and at 20th, 30th, 40th, 50th, 70th, 80th and 90th points in English Language Test. The candidates of the youngest group of age 25 years and below had poor performance from the candidates of other three age groups in English Language Test at 10th, 20th, 30th, 50th, 75th, 80th and 95th points. It was also revealed by the percentile scores of the candidates of four age groups that the candidates of the remaining three age groups i.e. of the ages 25 years and below, 26-30 years, and 31-35 years had almost same percentile scores in Reasoning Ability Test, Numerical Ability Test and English Language Test while in General Knowledge and Awareness of Current Affairs Test with few exceptions, candidates of the age groups of 26-30 years, 31-35 years, and 36 years and above had same percentile scores.
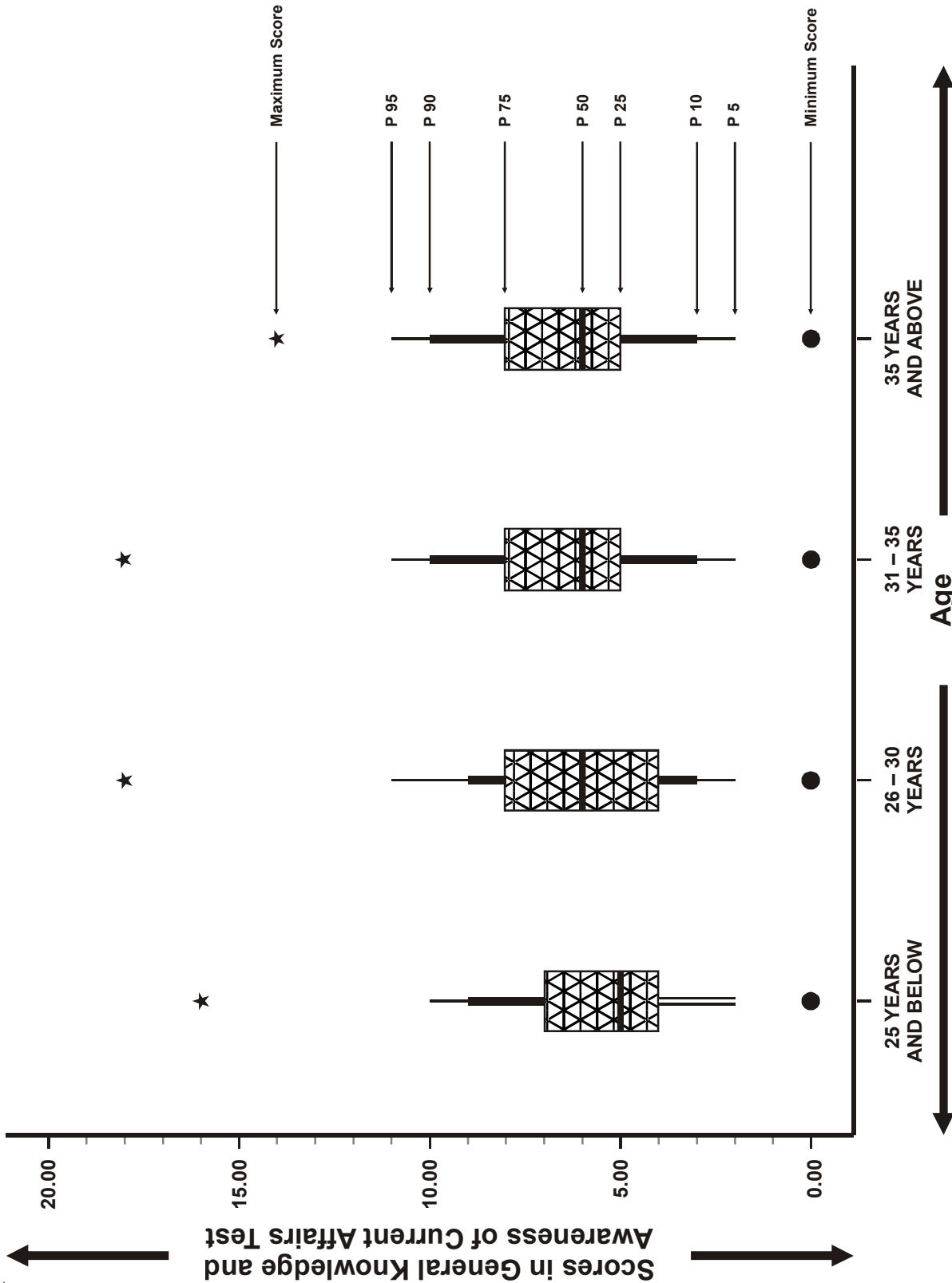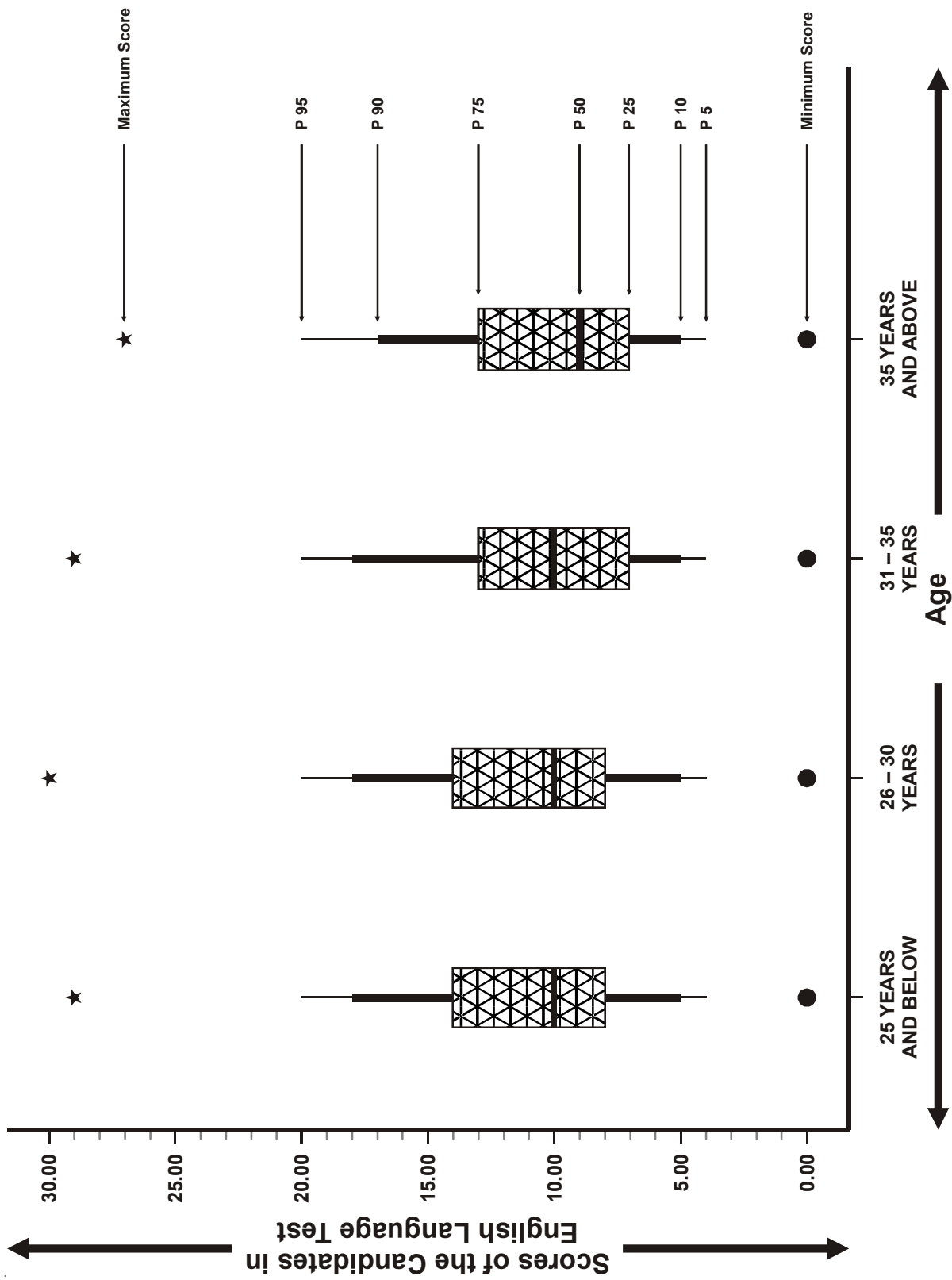
Fig. 25 - A graphic device for visual comparison of the scores of the candidates of the four age groups in English Language Test showing important centile values and total ranges

Summary of the Findings

The Centre for Policy Research is one of the national social science research institutes recognized by the Indian Council of Social Science Research (ICSSR), Government of India whose main emphasis is on developing substantive policy options for improvement of policy making and management. The Centre has carried out policy studies of various sectors of the   including personnel selection with a view to promote national development. Very recently, on 7th June, 2009, Centre conducted an examination for the selection of Assistant Administrative Officers for Life Insurance Corporation of India. The report at hand, is the outcome of an investigation undertaken to find out as to how the examination (total scores) and individual tests used, highlighted the individual differences amongst the candidates on the abilities/aptitudes measured by them. The report also mentions about the differences in the performance of the candidates in the examination and individual tests due to differences in category, gender, marital status and age. A summary of the findings is placed below:

The analysis of the distribution of scores of the candidates in Reasoning Ability Test, Numerical Ability Test, General Knowledge and Awareness of Current Affairs Test and English Language Test revealed that all these tests discriminated well among the candidates at higher levels of abilities assesses by them but as there was loss of 20% score range in case of Reasoning Ability Test and 10% in case of General Knowledge and Awareness of Current Affairs Test while there was no loss of score range in case of Numerical Ability Test and English Language Test, later two tests were found to be very good from the point of view of difficulty, discrimination and placement of candidates.

The analysis of the performance of the candidates *vis-a-vis* different categories revealed that the performance of the candidates of General Category from the candidates of OBC category and that of the candidates of OBC category from the candidates of SC and ST categories was better in the Examination and English Language Test. In Numerical Ability Test General catgeory candidates were little better (at median and above) from OBC category candidates and OBC category candidates were little better from SC and ST category candidates. However, in General Knowledge and Awareness of Current Affairs Test, ST category candidates were little better (at 30th, 60th and 90th points) from the candidates of other categories.

The analysis of the performance of the candidates *vis-a-vis* gender revealed that male candidates had better performance from the female candidates in the Examination, Reasoning Ability Test,

Numerical Ability Test and General Knowledge and Awareness of Current Affairs Test while female candidates had better performance from the male candidates in English Language Test.

The analysis of the performance of the candidates *vis-a-vis* marital status revealed that performance of the unmarried candidates was little better from the married candidates in the Examination, Reasoning Ability Test and Numerical Ability Test while marital status of the candidates had no influence on their performance in General Knowledge and Awareness of Current Affairs Test while in English Language Test it has very little influence on their performance.

The analysis of the performance *vis-a-vis* different age groups revealed that the edest group of candidates of age 36 year and above had poor performance from the candidates of other three age groups in the Examination Reasoning Ability Test, Numerical Ability Test and English Language Test, and youngest group of candidates of age 25 years and below had poor performance from the candidates of other three age groups in General Knowledge and Awareness of Current Affairs Test. It was also revealed by the analysis that candidates of the age groups of 25 years and below, 26-30 years and 31-35 years had same performance in Numerical Ability Test while candidates of the age groups of 26-30 years, 31-35 years, and 36 years and above had same performance in General Knowledge and Awareness of Current Affairs Test.

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Table I

Distribution of Total Scores of General Category Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	50	50	0.0
6-10	64	114	0.14
11-15	276	390	0.48
16-20	890	1280	1.50
21-25	2094	3374	4.11
26-30	4216	7590	9.24
31-35	7735	15325	18.67
36-40	11160	26493	32.27
41-45	12965	39458	48.06
46-50	12236	51694	62.96
51-55	10292	61986	75.50
56-60	7646	69632	84.81
61-65	5420	75052	91.41
66-70	3478	78530	95.65
71-75	1978	80508	98.05
76-80	952	81460	99.21
81-85	427	81887	99.73
86-90	166	82053	99.94
91-95	39	82092	99.98
96-100	10	82102	100.00
101-105	3	82105	100.00
106-110	0	82105	100.00
111-115	0	82105	100.00
116-120	0	82105	100.00
121-125	0	82105	100.00
126-130	0	82105	100.00
131-135	0	82105	100.00
136-140	0	82105	100.00
141-145	0	82105	100.00
146-150	0	82105	100.00
151-155	0	82105	100.00
156-160	0	82105	100.00

Table II

Distribution of Total Scores of OBC Category Candidates only

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	29	29	0.00
6-10	42	71	0.19
11-15	153	224	0.59
16-20	890	1280	1.50
21-25	1067	1756	4.66
26-30	2300	4056	10.77
31-35	3995	8051	21.38
36-40	6088	14139	37.54
41-45	6653	20792	55.21
46-50	5719	26511	78.40
51-55	4194	30705	81.53
56-60	2935	33640	89.33
61-65	1917	35557	94.42
66-70	1167	36724	97.52
71-75	562	37286	99.01
76-80	241	37527	99.65
81-85	96	37623	99.90
86-90	27	37650	99.98
91-95	5	37655	99.99
96-100	3	37658	100.00
101-105	1	37659	100.00
106-110	0	37659	100.00
111-115	0	37659	100.00
116-120	0	37659	100.00
121-125	0	37659	100.00
126-130	0	37659	100.00
131-135	0	37659	100.00
136-140	0	37659	100.00
141-145	0	37659	100.00
146-150	0	37659	100.00
151-155	0	37659	100.00
156-160	0	37659	100.00

Table III

Distribution of Total Scores of SC Category Candidates only

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	24	24	0.00
6-10	41	65	0.19
11-15	221	286	0.85
16-20	750	1036	3.07
21-25	1546	2582	7.65
26-30	2815	5397	15.99
31-35	4944	10341	30.63
36-40	6363	16704	49.48
41-45	6158	22862	67.72
46-50	4737	27599	81.75
51-55	2946	30545	90.47
56-60	1711	32256	95.54
61-65	876	33132	98.13
66-70	405	33537	99.33
71-75	148	33685	99.77
76-80	51	33736	99.92
81-85	21	33757	99.99
86-90	4	33761	100.00
91-95	1	33762	100.00
96-100	0	33762	100.00
101-105	0	33762	100.00
106-110	0	33762	100.00
111-115	0	33762	100.00
116-120	0	33762	100.00
121-125	0	33762	100.00
126-130	0	33762	100.00
131-135	0	33762	100.00
136-140	0	33762	100.00
141-145	0	33762	100.00
146-150	0	33762	100.00
151-155	0	33762	100.00
156-160	0	33762	100.00

Table IV

Distribution of Total Scores of ST Category Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	10	10	0.09
6-10	21	31	0.28
11-15	88	119	1.08
16-20	239	358	3.24
21-25	537	895	8.10
26-30	1033	1928	17.45
31-35	1625	3553	32.16
36-40	2013	5566	50.38
41-45	1903	7469	67.61
46-50	1546	9015	81.61
51-55	982	9997	90.50
56-60	563	10560	95.59
61-65	303	10863	98.33
66-70	122	10985	99.44
71-75	38	11023	99.78
76-80	17	11040	99.94
81-85	5	11045	99.98
86-90	1	11046	99.99
91-95	1	11047	100.00
96-100	0	11047	100.00
101-105	0	11047	100.00
106-110	0	11047	100.00
111-115	0	11047	100.00
116-120	0	11047	100.00
121-125	0	11047	100.00
126-130	0	11047	100.00
131-135	0	11047	100.00
136-140	0	11047	100.00
141-145	0	11047	100.00
146-150	0	11047	100.00
151-155	0	11047	100.00
156-160	0	11047	100.00

Table V

**Distribution of Scores in Reasoning Ability Test
of General Category Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	202	202	0.25
4-6	612	814	0.99
7-9	2124	2938	3.58
10-12	5127	8065	9.82
13-15	9722	17787	21.66
16-18	14544	32331	39.38
19-21	16349	48680	59.29
22-24	14305	62985	76.71
25-27	9986	72971	88.88
28-30	5453	78424	95.52
31-33	2516	80940	98.58
34-36	895	81835	99.67
37-39	234	82069	99.96
40-42	30	82099	99.99
43-45	5	82104	100.00
46-48	1	82105	100.00
49-51	0	82105	100.00
52-54	0	82105	100.00
55-57	0	82105	100.00
58-60	0	82105	100.00

Table VI

Distribution of Scores in Reasoning Ability Test
of OBC Category Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	100	100	0.27
4-6	283	383	1.02
7-9	973	1356	3.60
10-12	2336	3692	9.80
13-15	4718	8410	22.33
16-18	7278	15688	41.66
19-21	7940	23628	62.74
22-24	6500	30128	80.00
25-27	4307	34435	91.44
28-30	2085	36520	96.98
31-33	799	37319	99.10
34-36	265	37584	99.80
37-39	60	37644	99.96
40-42	12	37656	99.99
43-45	3	37659	100.00
46-48	0	37659	100.00
49-51	0	37659	100.00
52-54	0	37659	100.00
55-57	0	37659	100.00
58-60	0	37659	100.00

Table VII

Distribution of Scores in Reasoning Ability Test
of SC Category Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	107	107	0.32
4-6	437	544	1.61
7-9	1372	1916	5.68
10-12	3123	5039	14.93
13-15	5508	10547	31.24
16-18	7184	17731	52.52
19-21	6880	24611	72.90
22-24	4953	29564	87.57
25-27	2630	32194	95.36
28-30	1080	33274	98.55
31-33	352	33626	99.68
34-36	109	33735	99.92
37-39	22	33757	99.99
40-42	5	33762	100.00
43-45	0	33762	100.00
46-48	0	33762	100.00
49-51	0	33762	100.00
52-54	0	33762	100.00
55-57	0	33762	100.00
58-60	0	33762	100.00

Table VIII

Distribution of Scores in Reasoning Ability Test
of ST Category Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	45	45	0.41
4-6	160	205	1.86
7-9	532	737	6.67
10-12	1172	1909	17.28
13-15	1899	3808	34.47
16-18	2447	6255	56.62
19-21	2182	8437	76.37
22-24	1458	9895	89.57
25-27	730	10625	96.18
28-30	298	10923	98.88
31-33	97	11020	99.76
34-36	26	11046	99.99
37-39	1	11047	100.00
40-42	0	11047	100.00
43-45	0	11047	100.00
46-48	0	11047	100.00
49-51	0	11047	100.00
52-54	0	11047	100.00
55-57	0	11047	100.00
58-60	0	11047	100.00

Table IX

**Distribution of Scores in Numerical Ability Test
of General Category Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	45	45	0.41
4-6	160	205	1.86
7-9	532	737	6.67
10-12	1172	1909	17.28
13-15	1899	3808	34.47
16-18	2447	6255	56.62
19-21	2182	8437	76.37
22-24	1458	9895	89.57
25-27	730	10625	96.18
28-30	298	10923	98.88
31-33	97	11020	99.76
34-36	26	11046	99.99
37-39	1	11047	100.00

Table X

Distribution of Scores in Numerical Ability Test
of OBC Category Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	3643	3643	9.67
4-6	7805	11448	30.40
7-9	11335	22783	60.50
10-12	7608	30391	80.70
13-15	3885	34276	91.02
16-18	2043	36319	96.44
19-21	978	37297	99.04
22-24	311	37608	99.86
25-27	48	37656	99.99
28-30	3	37659	100.00
31-33	0	37659	100.00
34-36	0	37659	100.00
37-39	0	37659	100.00

Table XI

**Distribution of Scores in Numerical Ability Test
of SC category Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	4497	4497	13.32
4-6	8927	13424	39.76
7-9	11263	24687	73.12
10-12	5994	30681	90.87
13-15	2103	32784	97.10
16-18	691	33475	99.15
19-21	219	33694	99.80
22-24	61	33755	99.98
25-27	7	33762	100.00
28-30	0	33762	100.00
31-33	0	33762	100.00
34-36	0	33762	100.00
37-39	0	33762	100.00

Table XII

**Distribution of Scores in Numerical Ability Test
of ST Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	1650	1650	14.94
4-6	2980	4630	41.91
7-9	3542	8172	73.97
10-12	1866	10038	90.87
13-15	675	10713	96.98
16-18	232	10945	99.08
19-21	74	11019	99.75
22-24	23	11042	99.95
25-27	5	11047	100.00
28-30	0	11047	100.00
31-33	0	11047	100.00
34-36	0	11047	100.00
37-39	0	11047	100.00

Table XIII

**Distribution of Scores in General Knowledge and Awareness of
Current Affairs Test of General Category Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	15197	15197	18.51
4-6	36678	51875	63.18
7-9	23291	75166	91.55
10-12	6077	81243	98.95
13-15	833	82076	99.96
16-18	29	82105	100.00
19-21	0	82105	100.00
22-24	0	82105	100.00
25-27	0	82105	100.00
28-30	0	82105	100.00
31-33	0	82105	100.00
34-36	0	82105	100.00
37-39	0	82105	100.00

Table XIV

**Distribution of Scores in General Knowledge and Awareness of
Current Affairs Test of OBC Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	7320	7320	19.44
4-6	16551	23871	63.39
7-9	10225	34096	90.54
10-12	3100	37196	98.77
13-15	450	37646	99.97
16-18	13	37659	99.97
19-21	0	37659	100.00
22-24	0	37659	100.00
25-27	0	37659	100.00
28-30	0	37659	100.00
31-33	0	37659	100.00
34-36	0	37659	100.00
37-39	0	37659	100.00

Table XV

**Distribution of Scores in General Knowledge and Awareness of
Current Affairs Test of SC Category Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	6197	6197	18.35
4-6	15642	21839	64.69
7-9	9593	31432	93.10
10-12	2104	33536	99.33
13-15	221	33757	99.99
16-18	5	33762	100.00
19-21	0	33762	100.00
22-24	0	33762	100.00
25-27	0	33762	100.00
28-30	0	33762	100.00
31-33	0	33762	100.00
34-36	0	33762	100.00
37-39	0	33762	100.00

Table XVI

**Distribution of Scores in General Knowledge and Awareness of
Current Affairs Test of ST Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	1640	1640	14.85
4-6	4716	6356	57.54
7-9	3575	9931	89.90
10-12	1014	10945	99.00
13-15	101	11046	99.99
16-18	1	11047	100.00
19-21	0	11047	100.00
22-24	0	11047	100.00
25-27	0	11047	100.00
28-30	0	11047	100.00
31-33	0	11047	100.00
34-36	0	11047	100.00
37-39	0	11047	100.00

Table XVII

**Distribution of Scores in English Language Test
of General Category Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	2978	2970	3.63
4-6	7930	10908	13.29
7-9	18109	29017	35.34
10-12	19385	48402	58.95
13-15	14383	62785	76.47
16-18	9474	72259	88.01
19-21	5872	78131	95.16
22-24	3041	81172	98.86
25-27	881	82053	99.94
28-30	52	82015	100.00
31-33	0	82015	100.00
34-36	0	82015	100.00
37-39	0	82015	100.00

Table XVIII

**Distribution of Scores in English Language Test
of OBC Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	1687	1687	4.48
4-6	5024	6711	17.82
7-9	10642	17353	46.08
10-12	9829	27182	72.18
13-15	5779	32961	87.52
16-18	2800	35761	94.96
19-21	1287	37048	98.38
22-24	490	37538	99.68
25-27	117	37655	99.99
28-30	4	37659	100.00
31-33	0	37659	100.00
34-36	0	37659	100.00
37-39	0	37659	100.00

Table XIX

**Distribution of Scores in English Language Test
of SC Category Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	1943	1943	5.75
4-6	5646	7589	22.48
7-9	10623	18212	53.94
10-12	8568	26780	79.32
13-15	4105	30885	91.48
16-18	1787	32672	96.77
19-21	755	33427	99.01
22-24	281	33708	99.84
25-27	48	33756	99.98
28-30	6	33762	100.00
31-33	0	33762	100.00
34-36	0	33762	100.00
37-39	0	33762	100.00

Table XX

**Distribution of Scores in English Language Test
of ST Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	694	694	6.28
4-6	2023	2717	24.59
7-9	3455	6172	55.87
10-12	2454	8626	78.08
13-15	1240	9866	89.31
16-18	641	10507	95.11
19-21	363	10870	98.40
22-24	138	11008	99.65
25-27	34	11042	99.65
28-30	5	11047	100.00
31-33	0	11047	100.00
34-36	0	11047	100.00
37-39	0	11047	100.00

Table XXI

Distribution of Total Scores of Male Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	83	83	0.09
6-10	104	187	0.20
11-15	398	585	0.63
16-20	1172	1757	1.90
21-25	2606	4363	4.71
26-30	5175	9538	10.31
31-35	9724	19262	20.81
36-40	13968	33230	35.91
41-45	15322	48552	52.46
46-50	13667	62219	67.23
51-55	10553	72772	78.63
56-60	7693	80465	86.94
61-65	5329	85794	92.70
66-70	3381	89175	96.35
71-75	1893	91068	98.40
76-80	886	91954	99.36
81-85	395	92349	99.78
86-90	148	92497	99.94
91-95	36	92533	99.98
96-100	12	92545	100.00
101-105	4	92549	100.00
106-110	0	92549	100.00
111-115	0	92549	100.00
116-120	0	92549	100.00
121-125	0	92549	100.00
126-130	0	92549	100.00
131-135	0	92549	100.00
136-140	0	92549	100.00
141-145	0	92549	100.00
146-150	0	92549	100.00
151-155	0	92549	100.00
156-160	0	92549	100.00

Table XXII

Distribution of Total Scores of Female Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	21	21	0.05
6-10	41	62	0.13
11-15	242	304	0.66
16-20	825	1129	2.43
21-25	1817	2946	6.35
26-30	3495	6441	13.88
31-35	5738	12179	26.25
36-40	7579	19776	42.63
41-45	8012	27788	59.90
46-50	6698	34486	74.33
51-55	4984	39470	85.00
56-60	3148	42618	91.86
61-65	1960	44578	96.09
66-70	1053	45631	98.36
71-75	464	46095	99.36
76-80	198	46293	99.78
81-85	75	46368	99.95
86-90	20	46388	99.99
91-95	5	46393	100.00
96-100	0	46393	100.00
101-105	0	46393	100.00
106-110	0	46393	100.00
111-115	0	46393	100.00
116-120	0	46393	100.00
121-125	0	46393	100.00
126-130	0	46393	100.00
131-135	0	46393	100.00
136-140	0	46393	100.00
141-145	0	46393	100.00
146-150	0	46393	100.00
151-155	0	46393	100.00
156-160	0	46393	100.00

Table XXII

Distribution of Total Scores of Female Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	21	21	0.05
6-10	41	62	0.13
11-15	242	304	0.66
16-20	825	1129	2.43
21-25	1817	2946	6.35
26-30	3495	6441	13.88
31-35	5738	12179	26.25
36-40	7579	19776	42.63
41-45	8012	27788	59.90
46-50	6698	34486	74.33
51-55	4984	39470	85.00
56-60	3148	42618	91.86
61-65	1960	44578	96.09
66-70	1053	45631	98.36
71-75	464	46095	99.36
76-80	198	46293	99.78
81-85	75	46368	99.95
86-90	20	46388	99.99
91-95	5	46393	100.00
96-100	0	46393	100.00
101-105	0	46393	100.00
106-110	0	46393	100.00
111-115	0	46393	100.00
116-120	0	46393	100.00
121-125	0	46393	100.00
126-130	0	46393	100.00
131-135	0	46393	100.00
136-140	0	46393	100.00
141-145	0	46393	100.00
146-150	0	46393	100.00
151-155	0	46393	100.00
156-160	0	46393	100.00

Table XXIII

Distribution of Scores in Reasoning Ability Test of Male Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	307	307	0.33
4-6	836	1143	1.24
7-9	2636	3779	4.00
10-12	6132	9911	10.71
13-15	11862	21773	23.53
16-18	17633	39406	48.58
19-21	18867	58273	62.96
22-24	15610	73883	79.83
25-27	10191	84074	90.84
28-30	5261	89290	96.48
31-33	2265	91555	98.93
34-36	760	92315	99.75
37-39	195	92510	99.96
40-42	31	92541	99.99
43-45	7	92548	100.00
46-48	1	92549	100.00
49-51	0	92549	100.00
52-54	0	92549	100.00
55-57	0	92549	100.00
58-60	0	92549	100.00

Table XXIV

Distribution of Scores in Reasoning Ability Test of Female Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	88	88	0.19
4-6	439	527	1.14
7-9	1597	2124	4.50
10-12	3654	5778	12.45
13-15	6446	12224	26.35
16-18	8818	21042	45.36
19-21	9356	30398	65.52
22-24	7373	37771	81.42
25-27	4767	42538	91.69
28-30	2413	44951	96.89
31-33	1003	45954	99.05
34-36	346	46300	99.80
37-39	82	46382	99.98
40-42	10	46392	100.00
43-45	1	46393	100.00
46-48	0	46393	100.00
49-51	0	46393	100.00
52-54	0	46393	100.00
55-57	0	46393	100.00
58-60	0	46393	100.00

Table XXV

**Distribution of Scores in Numerical Ability Test
of Male Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	8014	8014	8.66
4-6	18466	26480	28.61
7-9	27128	53608	57.92
10-12	18966	72574	78.42
13-15	10314	82888	89.56
16-18	5679	88567	95.70
19-21	2773	91340	98.69
22-24	1026	92366	99.80
25-27	174	92540	99.99
28-30	9	92549	100.00
31-33	0	92549	100.00
34-36	0	92549	100.00
37-39	0	92549	100.00

Table XXVI

**Distribution of Scores in Numerical Ability Test
of Female Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	7337	7337	15.81
4-6	12283	19620	42.29
7-9	14260	33880	73.03
10-12	7751	41631	89.74
13-15	3114	44745	96.45
16-18	1136	45881	98.90
19-21	397	46278	99.75
22-24	105	46383	99.98
25-27	8	46391	100.00
28-30	2	46393	100.00
31-33	0	46393	100.00
34-36	0	46393	100.00
37-39	0	46393	100.00

Table XXVII

**Distribution of Scores in General Knowledge and Awareness of
Current Affairs Test of Male Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	14908	14908	16.11
4-6	38953	53861	58.20
7-9	28653	82514	89.16
10-12	8759	91273	98.62
13-15	1239	92512	99.96
16-18	37	92549	100.00
19-21	0	92549	100.00
22-24	0	92549	100.00
25-27	0	92549	100.00
28-30	0	92549	100.00
31-33	0	92549	100.00
34-36	0	92549	100.00
37-39	0	92549	100.00

Table XXVIII

Distribution of Scores in General Knowledge and Awareness of Current Affairs Test of Female Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	11071	11071	23.86
4-6	23225	34296	73.92
7-9	10531	44827	96.62
10-12	1456	46283	99.76
13-15	105	46388	99.99
16-18	5	46393	100.00
19-21	0	46393	100.00
22-24	0	46393	100.00
25-27	0	46393	100.00
28-30	0	46393	100.00
31-33	0	46393	100.00
34-36	0	46393	100.00
37-39	0	46393	100.00

Table XXIX

**Distribution of Scores in English Language Test
of male Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	4401	4401	4.76
4-6	12090	16491	17.82
7-9	24814	41305	17.82
10-12	22674	63797	69.13
13-15	13898	77877	84.15
16-18	7803	85680	92.58
19-21	4323	90003	97.25
22-24	1979	91982	99.39
25-27	538	92520	99.97
28-30	29	92549	100.00
31-33	0	92549	100.00
34-36	0	92549	100.00
37-39	0	92549	100.00

Table XXX

**Distribution of Scores in English Language Test
of Female Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	1880	1880	4.85
4-6	5314	7194	15.51
7-9	11218	184121	39.69
10-12	11300	29712	64.84
13-15	7594	37306	80.41
16-18	4645	41951	90.43
19-21	2678	44629	96.20
22-24	1344	45793	99.09
25-27	388	46361	99.93
28-30	32	46393	100.00
31-33	0	46393	100.00
34-36	0	46393	100.00
37-39	0	46393	100.00

Table XXXI

Distribution of Total Scores of Married Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	23	23	0.10
6-10	30	53	0.23
11-15	144	197	0.85
16-20	351	548	2.35
21-25	749	1297	5.57
26-30	1520	2817	12.10
31-35	2667	5484	23.56
36-40	3804	9288	39.91
41-45	4297	13585	58.37
46-50	3454	17039	73.22
51-55	2480	19519	83.87
56-60	1632	21151	90.89
61-65	1014	22165	95.24
66-70	586	22751	97.76
71-75	303	23054	99.06
76-80	135	23189	99.64
81-85	52	23241	99.87
86-90	21	23262	99.96
91-95	8	23270	99.99
96-100	1	46393	100.00
101-105	1	46393	100.00
106-110	0	23272	100.00
111-115	0	23272	100.00
116-120	0	23272	100.00
121-125	0	23272	100.00
126-130	0	23272	100.00
131-135	0	23272	100.00
136-140	0	23272	100.00
141-145	0	23272	100.00
146-150	0	23272	100.00
151-155	0	23272	100.00
156-160	0	23272	100.00

Table XXXII

Distribution of Total Scores of Unmarried Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-5	90	90	0.06
6-10	138	228	0.16
11-15	594	822	0.58
16-20	1993	2815	1.99
21-25	4495	7310	5.17
26-30	8844	16154	11.43
31-35	15632	31786	22.50
36-40	21828	53614	37.94
41-45	23382	76996	54.49
46-50	20784	97780	69.20
51-55	15934	113714	80.48
56-60	11223	124937	88.42
61-65	7502	132439	93.73
66-70	4586	137025	96.97
71-75	2423	139448	98.69
76-80	1126	140574	99.49
81-85	497	141071	99.84
86-90	177	141248	99.96
91-95	38	141286	99.99
96-100	12	141298	100.00
101-105	3	141301	100.00
106-110	0	141301	100.00
111-115	0	141301	100.00
116-120	0	141301	100.00
121-125	0	141301	100.00
126-130	0	141301	100.00
131-135	0	141301	100.00
136-140	0	141301	100.00
141-145	0	141301	100.00
146-150	0	141301	100.00
151-155	0	141301	100.00
156-160	0	141301	100.00

Table XXXIII

Distribution of Scores in Reasoning Ability Test of Married Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	70	70	0.30
4-6	188	258	1.11
7-9	668	926	3.98
10-12	1604	2530	10.87
13-15	3083	5613	24.12
16-18	4592	10205	43.85
19-21	4936	15141	65.06
22-24	3862	19003	81.66
25-27	2369	21372	91.84
28-30	1192	22564	96.96
31-33	486	23050	99.05
34-36	178	23228	99.81
37-39	38	23266	99.97
40-42	5	23271	100.00
43-45	1	23272	100.00
46-48	0	23272	100.00
49-51	0	23272	100.00
52-54	0	23272	100.00
55-57	0	23272	100.00
58-60	0	23272	100.00

Table XXXIV

Distribution of Scores in Reasoning Ability Test of Unmarried Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	384	384	0.27
4-6	1304	1688	1.19
7-9	4333	6021	4.26
10-12	10154	16175	11.45
13-15	18764	34939	24.73
16-18	26861	61800	43.74
19-21	28415	90215	63.85
22-24	23345	113569	80.37
25-27	15284	128853	91.19
28-30	7724	136577	96.66
31-33	3278	139855	98.98
34-36	1117	140972	99.77
37-39	279	141251	99.96
40-42	42	141293	99.99
43-45	7	141300	100.00
46-48	1	141301	100.00
49-51	0	141301	100.00
52-54	0	141301	100.00
55-57	0	141301	100.00
58-60	0	141301	100.00

Table XXXV

**Distribution of Scores in Numerical Ability Test
of Married Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	2770	2770	11.90
4-6	5485	8255	35.47
7-9	7459	15714	67.52
10-12	4328	20042	86.12
13-15	1875	21917	94.18
16-18	822	22739	97.71
19-21	383	23122	99.36
22-24	129	23251	99.91
25-27	19	23270	99.99
28-30	2	23272	100.00
31-33	0	23272	100.00
34-36	0	23272	100.00
37-39	0	23272	100.00

Table XXXVI

Distribution of Scores in Numerical Ability Test
of Unmarried Candidates

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	15378	15378	10.88
4-6	31232	46610	32.99
7-9	41787	88397	62.56
10-12	27329	115726	81.90
13-15	13930	129656	91.76
16-18	7053	136709	96.75
19-21	3255	139964	99.05
22-24	1137	141101	99.86
25-27	191	141292	99.99
28-30	9	141301	100.00
31-33	0	141301	100.00
34-36	0	141301	100.00
37-39	0	141301	100.00

Table XXXVII

**Distribution of Scores in General Knowledge and Awareness of
Current Affairs Test of Married Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	4279	4279	18.39
4-6	10806	15085	64.82
7-9	6552	21637	92.97
10-12	1471	23108	99.30
13-15	161	23269	99.99
16-18	3	23272	100.00
19-21	0	23272	100.00
22-24	0	23272	100.00
25-27	0	23272	100.00
28-30	0	23272	100.00
31-33	0	23272	100.00
34-36	0	23272	100.00
37-39	0	23272	100.00

Table XXXVIII

**Distribution of Scores in General Knowledge and Awareness of
Current Affairs Test of Unmarried Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	26075	26075	18.45
4-6	62781	88856	62.88
7-9	40132	128988	91.29
10-12	10824	139812	98.95
13-15	1444	141256	99.97
16-18	45	141301	100.00
19-21	0	141301	100.00
22-24	0	141301	100.00
25-27	0	141301	100.00
28-30	0	141301	100.00
31-33	0	141301	100.00
34-36	0	141301	100.00
37-39	0	141301	100.00

Table XXXIX

**Distribution of Scores in English Language Test
of Married Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	1174	1174	5.04
4-6	3034	4208	18.08
7-9	6413	10621	45.64
10-12	5713	16334	70.19
13-15	3443	19777	84.98
16-18	1799	21576	92.71
19-21	1044	22620	97.20
22-24	494	23114	99.32
25-27	142	23256	99.93
28-30	16	23272	100.00
31-33	0	23272	100.00
34-36	0	23272	100.00
37-39	0	23272	100.00

Table XXXX

**Distribution of Scores in English Language Test
of Unmarried Candidates**

Class Interval	Frequency	Cum. Frequency	% Cum. Frequency
0-3	6128	6128	4.34
4-6	17589	23717	16.78
7-9	36416	60133	42.56
10-12	34523	94656	66.99
13-15	22064	116720	82.60
16-18	12903	129623	91.74
19-21	7233	136856	96.85
22-24	3456	140312	99.30
25-27	938	141250	99.96
28-30	51	141301	100.00
31-33	0	141301	100.00
34-36	0	141301	100.00
37-39	0	141301	100.00

Table XXXXI

Distribution of Total Scores of the Candidates of the Age Group 25 Years and Below

Class Interval	Frequency	Percent	Cumulative Percent
0-5	41	.1	.1
6-10	55	.	.1
11-15	291	.4	.6
16-20	1036	1.5	2.0
21-25	2437	3.5	5.5
26-30	4677	6.7	12.2
31-35	7932	11.4	23.6
36-40	10997	15.8	39.4
41-45	11690	16.8	56.1
46-50	10160	14.6	70.7
51-55	7798	11.2	81.9
56-60	5293	7.6	89.5
61-65	3416	4.9	94.4
66-70	2087	3.0	97.4
71-75	1050	1.5	98.9
76-80	502	.7	99.6
81-85	213	.3	99.9
86-90	59	.1	100.0
91-95	13	.0	100.0
96-100	6	.0	100.0
101-105	1	.0	100.0
106-110	0	.0	100.0
111-115	0	.0	100.0
116-120	0	.0	100.0
121-125	0	.0	100.0
126-130	0	.0	100.0
131-135	0	.0	100.0
136-140	0	.0	100.0
141-145	0	.0	100.0
146-150	0	.0	100.0
151-155	0	.0	100.0
156-160	0	.0	100.0
Total	**69754**	**100.0**	

Table XXXXII

Distribution of Total Scores of the Candidates of the Age Group 26-30 Years

Class Interval	Frequency	Percent	Cumulative Percent
0-5	54	.1	.1
6-10	97	.1	.2
11-15	372	.5	.6
16-20	1133	1.4	2.1
21-25	2435	3.0	5.1
26-30	4902	6.1	11.1
31-35	8843	11.0	22.1
36-40	12460	15.4	37.5
41-45	13539	16.8	54.3
46-50	11984	14.8	69.1
51-55	9009	11.2	80.3
56-60	6400	7.9	88.2
61-65	4390	5.4	93.7
66-70	2621	3.2	96.9
71-75	1400	1.7	98.6
76-80	652	.8	99.4
81-85	293	.4	99.8
86-90	119	.1	100.0
91-95	32	.0	100.0
96-100	6	.0	100.0
101-105	1	.0	100.0
106-110	0	.0	100.0
111-115	0	.0	100.0
116-120	0	.0	100.0
121-125	0	.0	100.0
126-130	0	.0	100.0
131-135	0	.0	100.0
136-140	0	.0	100.0
141-145	0	.0	100.0
146-150	0	.0	100.0
151-155	0	.0	100.0
156-160	0	.0	100.0
Total	**80742**	**100.0**	

Table XXXXIII

Distribution of Total Scores of the Candidates of the Age Group 31-35 Years

Class Interval	Frequency	Percent	Cumulative Percent
0-5	17	.1	.1
6-10	14	.1	.2
11-15	72	.5	.8
16-20	167	1.2	2.0
21-25	356	2.7	4.7
26-30	738	5.5	10.2
31-35	1451	10.8	21.0
36-40	2044	15.2	36.2
41-45	2326	17.3	53.6
46-50	1992	14.9	68.4
51-55	1530	11.4	79.8
56-60	1129	8.4	88.3
61-65	679	5.1	93.3
66-70	455	3.4	96.7
71-75	271	2.0	98.7
76-80	105	.8	99.5
81-85	40	.3	99.8
86-90	20	.1	100.0
91-95	1	.0	100.0
96-100	1	.0	100.0
101-105	2	.0	100.0
106-110	0	.0	100.0
111-115	0	.0	100.0
116-120	0	.0	100.0
121-125	0	.0	100.0
126-130	0	.0	100.0
131-135	0	.0	100.0
136-140	0	.0	100.0
141-145	0	.0	100.0
146-150	0	.0	100.0
151-155	0	.0	100.0
156-160	0	.0	100.0
Total	**13410**	**100.0**	

Table XXXXIV

Distribution of Total Scores of the Candidates of the Age Group 36 Years and Above

Class Interval	Frequency	Percent	Cumulative Percent
0-5	1	.1	.1
6-10	2	.3	.4
11-15	3	.4	.9
16-20	8	1.2	2.1
21-25	16	2.4	4.5
26-30	47	7.0	11.5
31-35	73	10.9	22.5
36-40	131	19.6	42.1
41-45	124	18.6	60.7
46-50	102	15.3	76.0
51-55	77	11.5	87.6
56-60	33	4.9	92.5
61-65	31	4.6	97.2
66-70	9	1.3	98.5
71-75	5	.7	99.3
76-80	2	.3	99.6
81-85	3	.4	100.0
86-90	0	.0	100.0
91-95	0	.0	100.0
96-100	0	.0	100.0
101-105	0	.0	100.0
106-110	0	.0	100.0
111-115	0	.0	100.0
116-120	0	.0	100.0
121-125	0	.0	100.0
126-130	0	.0	100.0
131-135	0	.0	100.0
136-140	0	.0	100.0
141-145	0	.0	100.0
146-150	0	.0	100.0
151-155	0	.0	100.0
156-160	0	.0	100.0
Total	**667**	**100.0**	

Table XXXXV

**Distribution of Scores of the Candidates of the Age Group 25 Years and Below
in Reasoning Ability Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	173	.2	.2
4-6	599	.9	1.1
7-9	2154	3.1	4.2
10-12	5032	7.2	11.4
13-15	9076	13.0	24.4
16-18	13147	18.8	43.3
19-21	13788	19.8	63.0
22-24	11548	16.6	79.6
25-27	7773	11.1	90.7
28-30	3944	5.7	96.4
31-33	1748	2.5	98.9
34-36	594	.9	99.7
37-39	147	.2	100.0
40-42	24	.0	100.0
43-45	6	.0	100.0
46-48	1	.0	100.0
Total	**69754**	**100.0**	

Table XXXXXII

**Distribution of Scores of the Candidates of the Age Group 26-30 Years
in Reasoning Ability Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	235	.3	.3
4-6	755	.9	1.2
7-9	2432	3.0	4.2
10-12	5768	7.1	11.4
13-15	10839	13.4	24.8
16-18	15486	19.2	44.0
19-21	16636	20.6	64.6
22-24	13312	16.5	81.1
25-27	8463	10.5	91.6
28-30	4288	5.3	96.9
31-33	1753	2.2	99.0
34-36	612	.8	99.8
37-39	142	.2	100.0
40-42	19	.0	100.0
43-45	2	.0	100.0
46-48	0	.0	100.0
Total	**80742**	**100.0**	

Table XXXXVII

**Distribution of Scores of the Candidates of the Age Group 31-35 Years
in Reasoning Ability Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	43	.3	.3
4-6	130	1.0	1.3
7-9	395	2.9	4.2
10-12	912	6.8	11.0
13-15	1824	13.6	24.6
16-18	2666	19.9	44.5
19-21	2796	20.9	65.4
22-24	2243	16.7	82.1
25-27	1362	10.2	92.3
28-30	661	4.9	97.2
31-33	258	1.9	99.1
34-36	89	.7	99.8
37-39	27	.2	100.0
40-42	4	.0	100.0
43-45	0	.0	100.0
46-48	0	.0	100.0
Total	**13410**	**100.0**	

Table XXXXVIII

**Distribution of Scores of the Candidates of the Age Group 36 Years and Above
in Reasoning Ability Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	3	.4	.4
4-6	8	1.2	1.6
7-9	20	3.0	4.6
10-12	46	6.9	11.5
13-15	108	16.2	27.7
16-18	154	23.1	50.8
19-21	131	19.6	70.5
22-24	113	16.9	87.4
25-27	55	8.2	95.7
28-30	23	3.4	99.1
31-33	5	.7	99.9
34-36	0	.0	99.9
37-39	1	.1	100.0
40-42	0	.0	100.0
43-45	0	.0	100.0
46-48	0	.0	100.0
Total	**667**	**100.0**	

Table XXXXIX

**Distribution of Scores of the Candidates of the Age Group 25 Years and Below
in Numerical Ability Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	7969	11.4	11.4
4-6	15679	22.5	33.9
7-9	20495	29.4	63.3
10-12	13397	19.2	82.5
13-15	6815	9.8	92.3
16-18	3364	4.8	97.1
19-21	1461	2.1	99.2
22-24	488	.7	99.9
25-27	82	.1	100.0
28-30	4	.0	100.0
Total	**69754**	**100.0**	

Table XXXXX

**Distribution of Scores of the Candidates of the Age Group 26-30 Years
in Numerical Ability Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	8805	10.9	10.9
4-6	17932	22.2	33.1
7-9	24277	30.1	63.2
10-12	15483	19.2	82.4
13-15	7742	9.6	91.9
16-18	3849	4.8	96.7
19-21	1876	2.3	99.0
22-24	666	.8	99.9
25-27	107	.1	100.0
28-30	5	.0	100.0
Total	**80742**	**100.0**	

Table XXXXXI

Distribution of Scores of the Candidates of the Age Group 31-35 Years
in Numerical Ability Test

Class Interval	Frequency	Percent	Cumulative Percent
0-3	1304	9.7	9.7
4-6	2936	21.9	31.6
7-9	4248	31.7	63.3
10-12	2636	19.7	83.0
13-15	1212	9.0	92.0
16-18	649	4.8	96.8
19-21	293	2.2	99.0
22-24	109	.8	99.8
25-27	21	.2	100.0
28-30	2	.0	100.0
Total	**13410**	**100.0**	

Table XXXXXII

**Distribution of Scores of the Candidates of the Age Group 36 Years and Above
in Numerical Ability Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	70	10.5	10.5
4-6	170	25.5	36.0
7-9	226	33.0	69.9
10-12	141	21.1	91.0
13-15	36	5.4	96.4
16-18	13	1.9	98.4
19-21	8	1.2	99.6
22-24	3	.4	100.0
25-27	0	..0	100.0
28-30	0	.0	100.0
Total	**667**	**100.0**	

Table XXXXXIII

**Distribution of Scores of the Candidates of the Age Group 25 Years and Below
in General Knowledge and Awareness of Current Affairs Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	15304	21.9	21.9
4-6	33003	47.3	69.3
7-9	17560	25.2	94.4
10-12	3519	5.0	99.5
13-15	361	.5	100.0
16-18	7	.0	100.0
Total	**69754**	**100.0**	

Table XXXXXIV

**Distribution of Scores of the Candidates of the Age Group 26-30 Years
in General Knowledge and Awareness of Current Affairs Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	13359	16.5	16.5
4-6	35145	43.5	60.1
7-9	24222	30.0	90.1
10-12	6999	8.7	98.7
13-15	987	1.2	100.0
16-18	30	.0	100.0
Total	**80742**	**100.0**	

Table XXXXXV

**Distribution of Scores of the Candidates of the Age Group 26-30 Years
in General Knowledge and Awareness of Current Affairs Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	1609	12.0	12.0
4-6	5174	38.6	50.6
7-9	4665	34.8	85.4
10-12	1699	12.7	98.0
13-15	252	1.9	99.9
16-18	11	.1	100.0
Total	**13410**	**100.0**	

Table XXXXXVI

**Distribution of Scores of the Candidates of the Age Group 36 Years and Above
in General Knowledge and Awareness of Current Affairs Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	82	12.3	12.3
4-6	265	39.7	52.0
7-9	237	35.5	87.6
10-12	78	11.7	99.3
13-15	5	.7	100.0
16-18	0	.0	100.0
Total	**667**	**100.0**	

Table XXXXXVII

**Distribution of Scores of the Candidates of the Age Group 25 Years and Below
in English Language Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	3186	4.6	4.6
4-6	8816	12.6	17.2
7-9	18162	26.0	43.2
10-12	17129	24.6	67.8
13-15	10823	15.5	83.3
16-18	6252	9.0	92.3
19-21	3344	4.8	97.1
22-24	1603	2.3	99.4
25-27	416	.6	100.0
28-30	23	.0	100.0
Total	**69754**	**100.0**	

Table XXXXXVIII

**Distribution of Scores of the Candidates of the Age Group 26-30 Years
in English Language Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	3490	4.3	4.3
4-6	9940	12.3	16.6
7-9	20797	25.8	42.4
10-12	19725	24.4	66.8
13-15	12622	15.6	82.5
16-18	7288	9.0	91.5
19-21	4234	5.2	96.7
22-24	2036	2.5	99.2
25-27	573	.7	100.0
28-30	37	.0	100.0
Total	**80742**	**100.0**	

Table XXXXXIX

**Distribution of Scores of the Candidates of the Age Group 31-35 Years
in English Language Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	599	4.5	4.5
4-6	1756	13.1	17.6
7-9	3671	27.4	44.9
10-12	3235	24.1	69.1
13-15	1976	14.7	83.8
16-18	1113	8.3	92.1
19-21	677	5.0	97.1
22-24	293	2.2	99.3
25-27	83	.6	99.9
28-30	7	.1	100.0
Total	**13410**	**100.0**	

Table XXXXXX

**Distribution of Scores of the Candidates of the Age Group 36 Years and Above
in English Language Test**

Class Interval	Frequency	Percent	Cumulative Percent
0-3	27	4.0	4.0
4-6	111	16.6	20.7
7-9	199	29.8	50.5
10-12	147	22.0	72.6
13-15	86	12.9	85.5
16-18	49	7.3	92.8
19-21	22	3.3	96.1
22-24	18	2.7	98.8
25-27	8	1.2	100.0
28-30	0	.0	100.0
Total	**667**	**100.0**	

Table I

DIFFERENTIAL ANALYSIS

General Vs. OBC

Tests	Category	N	Mean	SD	SEM	DF	t-value	Remark
Reasoning Ability	GENERAL	82105	20.172	5.983	0.021	119762	12.063	Sig.
	OBC	37659	19.738	5.688	0.029			
Numerical Ability	GENERAL	82105	9.061	4,714	0.016	119762	4.362	Sig.
	OBC	37659	8.927	4.522	0.023			
GK & Awareness	GENERAL	82105	5.975	2.601	0.009	119762	0.326	NS
	OBC	37659	5.800	2.682	0.014			
English Language	GENERAL	82105	11.881	5.197	0.018	119762	50.062	Sig.
	OBC	37659	10.329	4.475	0.023			
All Tests	GENERAL	82105	46.908	13.009	0.045	119762	26.644	Sig.
	OBC	37659	44.793	12.179	0.063			

Table II

General Vs. SC

Tests	Category	N	Mean	SD	SEM	DF	t-value	Remark
Reasoning Ability	GENERAL	82105	20.172	5.983	0.021	115865	52.113	Sig.
	SC	33762	18.200	5.524	0.030			
Numerical Ability	GENERAL	82105	9.061	4,714	0.016	115865	52.525	Sig.
	SC	33762	7.548	3.750	0.020			
GK & Awareness	GENERAL	82105	5.975	2.601	0.009	115865	5.116	Sig.
	SC	33762	5.710	2.468	0.013			
English Language	GENERAL	82105	11.881	5.197	0.018	115865	74.439	Sig.
	SC	33762	9.507	4.217	0.023			
All Tests	GENERAL	82105	46.908	13.009	0.045	115865	73.766	Sig.
	SC	33762	40.965	11.018	0.060			

Table III

General Vs. ST

Tests	Category	N	Mean	SD	SEM	DF	t-value	Remark
Reasoning Ability	GENERAL	82105	20.172	5.983	0.021	93150	41.976	Sig.
	ST	11047	17.653	5.454	0.052			
Numerical Ability	GENERAL	82105	9.061	4,714	0.016	93150	35.406	Sig.
	ST	11047	7.404	3.834	0.036			
GK & Awareness	GENERAL	82105	5.975	2.601	0.009	93150	12.296	Sig.
	ST	11047	6.118	2.569	0.024			
English Language	GENERAL	82105	11.881	5.197	0.018	93150	44.851	Sig.
	ST	11047	9.550	4.575	0.044			
All Tests	GENERAL	82105	46.908	13.009	0.045	93150	47.645	Sig.
	ST	11047	40.725	11.197	0.106			

Table IV

OBC Vs. SC

Tests	Category	N	Mean	SD	SEM	DF	t-value	Remark
Reasoning Ability	OBC	37659	19.738	5.688	0.029	71419	36.5728	Sig.
	SC	33762	18.200	5.524	0.030			
Numerical Ability	OBC	37659	8.927	4.522	0.023	71419	44.06	Sig.
	SC	33762	7.548	3.750	0.020			
GK & Awareness	OBC	37659	5.800	2.682	0.014	71419	4.65432	Sig.
	SC	33762	5.710	2.468	0.013			
English Language	OBC	37659	10.329	4.475	0.023	71419	25.1631	Sig.
	SC	33762	9.507	4.217	0.023			
All Tests	OBC	37659	44.793	12.179	0.063	71419	43.8646	Sig.
	SC	33762	40.965	11.018	0.060			

Table V

OBC Vs. ST

Tests	Category	N	Mean	SD	SEM	DF	t-value	Remark
Reasoning Ability	OBC	37659	19.738	5.688	0.029	48704	34.202	Sig.
	ST	11047	17.653	5.454	0.052			
Numerical Ability	OBC	37659	8.927	4.522	0.023	48704	32.171	Sig.
	ST	11047	7.404	3.834	0.036			
GK & Awareness	OBC	37659	5.800	2.682	0.014	48704	11.073	Sig.
	ST	11047	6.118	2.569	0.024			
English Language	OBC	37659	10.329	4.475	0.023	48704	15.993	Sig.
	ST	11047	9.550	4.575	0.044			
All Tests	OBC	37659	44.793	12.179	0.063	48704	31.437	Sig.
	ST	11047	40.725	11.187	0.106			

Table VI

SC Vs. ST

Tests	Category	N	Mean	SD	SEM	DF	t-value	Remark
Reasoning Ability	SC	33762	18.200	5.524	0.030	44807	9.071	Sig.
	ST	11047	17.653	5.454	0.052			
Numerical Ability	SC	33762	7.548	3.750	0.020	44807	3.493	Sig.
	ST	11047	7.404	3.834	0.036			
GK & Awareness	SC	33762	5.710	2.468	0.013	44807	14.945	Sig.
	ST	11047	6.118	2.569	0.024			
English Language	SC	33762	9.507	4.217	0.023	44807	0.911	Sig.
	ST	11047	9.550	4.575	0.044			
All Tests	SC	33762	40.965	11.018	0.060	44807	1.983	Sig.
	ST	11047	40.725	11.187	0.106			