

Appendix C.

TEST MANUAL

This test of intelligence has been prepared for the pupils of age groups 13 to 17 years, studying in standards VIII to X in Marathwada region (Aurangabad Division) of Maharashtra State.

This test may be used for giving educational and vocational guidance to the above mentioned pupils.

Description of the Test.

1. It is a verbal test of intelligence in Marathi.
2. It is divided into two parts, each part consisting of four subtests.
3. Each part has been timed separately.
4. It has been standardized with a sample of 7745 pupils.
5. The norms for ages 13, 14, 15, 16 and 17 years have been established separately. However no separate norms have been established for boys and girls.
6. The reliability coefficients of the tests are as given below:

Method	N	Reliability coefficient	PE
Test - retest	350	0.81	.0124
Split-half	1300	0.95	.002261
Kuder Richardson approximation formula	7745	0.84	-

7. The validity coefficients of the test are as follows:-

Description	N	Validity coefficient	PE
With school marks	400	0.5552	0.02333
With N.V.T.I.	220	0.8586	0.0106

8. Factor analysis, done by centroid method, indicates the existence of the following three factors:

Factor	Percentage
'g' factor	79
Verbal factor	8
Numerical factor	13

Test - Booklets.

1. There are two booklets part I, part II.
2. On the front page there are instructions to pupils.
3. Each test is to be solved in a different way.
- 4 a. Each test is printed on one sheet.

b. On one side of the sheet are instructions for solving the test. In case of tests 1 to 4, four practice examples are given and one of them has been solved. On the other side is printed the test proper.

c. In case of tests 5 to 8, no practice examples are given. Only model questions are given. They have been solved. The tests proper have been given immediately below the horizontal line.

Answer Sheets.

1. Answers of all the tests are to be recorded on only one specially prepared answer sheet.

2. At the top of the front page, the pupil is expected to give his personal information. He is not expected to write any thing below the horizontal line.

3. At the bottom, there are ten boxes in a row. The first eight boxes are meant for entering the number of correct responses of tests 1 to 8 in serial order, and the tenth box for entering the total score. (ninth box will be vacant)

4. The remaining five boxes may be used for entering the age and index number etc. if so desired.

5. On pages 2 and 3, there are eight columns separated by vertical lines. Each column is meant for recording the answers of that test whose serial number is given at the top of the column.

6. Each column has been divided into two parts by a horizontal line. Above this horizontal line, the answers of the practice examples of tests 1 to 4 are to be recorded. The answers of solved examples in every test have been recorded above this line, to demonstrate the way of recording the answers.

7. The answers of the test proper are to be recorded below the horizontal line.

8. On page 4 are given the answers of practice examples of tests 1 to 4.

#### Recording of Answers.

1. In case of tests 1 to 6, pupil has to select the answer which he thinks correct, to find out the alphabet representing that answer and then has to underline that alphabet from those printed

in row with the serial number of the item in the appropriate column in the answer sheet.

2. If, on second thought, the pupil finds that the underlined answer is incorrect, he has to score the underlined alphabet by putting a vartical line on the alphabet and then underline the other one which he thinks correct.

3. The answers of tests 7 and 8 are to be recorded by writing one number in each box in row with the serial number of the item.

Time Limit.

1. The maximum time to be allowed for answering each part is follows:

Part I	35 minutes
Part II	38 minutes
Rest Period	15 minutes between two sessions.

Suggestions to Administrators.

1. A standardized test is expected to be administered, scored and evaluated uniformly. The instructions provided for giving the test are to be followed very scrupulously. Any deviation in following instructions is likely to affect the results.

2. It is always advisable to have a colleague to assist in the administration of the test.

3. Give the test when the pupils are fresh.

Sitting Arrangement.

1. Give the test in a room having good light and ventilation.

2. Let each pupil sit on one desk, so that the chances of

copying the answers of other pupils are rare.

Before Administration.

1. Before the administration of the test be sure that,
  - a. you have read the manual completely and have followed every instruction clearly,
  - b. you are able to clarify any doubt that may be raised by any pupil,
  - c. you have done the sitting arrangement as per instructions,
  - d. you have adequate test-booklets and answer sheets,
  - e. you have a reliable stop watch,
  - f. each pupil has a pencil to record the answers,
  - g. you have some mended pencils to be supplied to pupils in case of emergency,
  - and h. every pupil knows his birth date. (If they do not know it, tell them from school records.)

2. Write on the blackboard, as shown below to demonstrate the pupils the way of recording the answers of practice examples of

test 1:

१	अ	ब	क	ड
२	अ	ब	क	ड
३	अ	ब	क	ड
४	अ	ब	क	ड

3. Do the casual talk as given below, so that the pupils will be at ease while solving the test.

"Good morning. I am going to give you a test in two sessions.

There will be a rest of 15 minutes between the two sessions.

It is not an examination. The questions are very simple and interesting. I am sure you will enjoy them.

The way of recording the answers is also very simple. You are not expected to write much.

You have to complete the tests in a limited time. So try to solve them as fast as you can."

Administration.

1. Distribute the answer sheets to the pupils and say,  
"(a) write the required information in the appropriate blank spaces above the horizontal line, on the front page,

(b) Do not write any thing below the horizontal line,

(c) Read the instructions very carefully,

and (d) when the reading of the first page is over, turn to the next page."

2. When all the pupils have completed the above tasks say,

"I will give you the test booklet part I. Read the instructions on the front page very carefully. Do not open it until I say so."

Distribute the copies of booklet I, and wait until every one reads the instructions.

3. Now read the following instructions very slowly:

Instructions to Pupils.

a. This booklet consists of four tests.

b. They are to be completed in 35 minutes. When the time is

over I will say stop and you will stop working.

c. Try to solve them as fast as you can. If you are not able to solve any question, do not waste much time on it. Go to the next one.

d. Time will be declared every five minutes.

e. Each test is to be solved in a different way. So the instructions for solving the test are given in the beginning of the test. (Show them in the booklet in your hand. Let the pupils not open their booklets.) Below the instructions there are four practice examples. The first of them has been solved and its answer recorded in the answer sheet.

f. Answers of the practice examples are given on page 4 of the answer sheet. (Show them. Let them observe in their answer sheets.)

g. The answers of items in test 1 are to be recorded in column 1 with the title "Kasoti 1\*". The column is divided into two parts by a horizontal line. (Show) The answers of the practice examples are to be recorded above the horizontal line and the answers of the test proper, below it.

h. Answers of the items in other tests are to be recorded in the same way in their respective columns.

i. To make the instructions clear, I will solve the practice examples of test 1.

4. Open the front page and refer to page 3. I will read the instructions. You look into your books. (The administrator will slowly and clearly read the instructions and mark the answer on the

black board by underlining the proper alphabet. Then he will ask the pupils to see how it has been recorded in their answer sheets. Now he will ask a pupil to solve example 2. The administrator will mark the answer on the black board and ask the pupils to mark it in their answer sheets. He will then ask them to refer to page 4 of the answer sheet and see whether it is correct.

5. Suppose you have underlined '  $\overline{p}$  '. Now you think it is incorrect. In that case strike it off as shown here (  $\overline{p}$  ). Then underline  $\overline{p}$  if you feel it to be correct. (Demonstrate this on the black board. Demonstrate the recording of the answers of practice examples 3 and 4).

6. Ask, 'Is there any difficulty in solving this test? Is there any doubt in recording the answers?' (If they raise any doubts clarify.)

7. Now I will not entertain any difficulties. Test 1 is given on page 4.

8. I will summarise- (a) first read instructions, (b) observe how the first example has been solved, (c) solve the remaining practice examples, (d) record their answers above the horizontal line in the appropriate column in the answer sheet and then (e) solve the test proper and record answers below the horizontal line.

9. You will solve tests 2, 3, 4 in serial order without waiting for instructions.

10. Open page 4. "Are you ready? When I say start, you start working." Take a pause and say "Start" and start the stopwatch

simultaneously.

11. Move in the class and see that pupils are working according to instructions. (It is observed that some pupils stop when they complete the first test. Ask them to go ahead. So move in the class atleast until all have completed the first test and have started solving the second one.)

12. Anounce the time every five minutes.

13. When 35 minutes are over ask them to stop and ask them to turn the answer sheet so that the page 3 will be at the top.

14. Collect the test booklet I. Let the answer sheets be with the pupils.

15. After 15 minutes distribute the test booklet part II, and ask them to read the instructions.

16. Read the following instructions.

Instructions to pupils:

a. This part also consists of four more tests.

b. There are no practice examples.

c. There are model questions at the beginning of each test.

They have been solved and their answers are recorded above the horizontal line in the answer sheet.

d. These tests are to be solved in 38 minutes.

17. Say, "Open page 3. Are you ready ? Start." and start the stop watch.

18. Move in the class and anounce time every five minutes.

19. After 38 minutes say "Stop". Let the pupils stop working.

20. First collect answer sheets and then test booklets.

21. Thank the pupils and ask whether they enjoyed it. Then set them free.

Scoring of the Answer Sheets.

1. The answers of tests 1 to 7 are to be assessed by using the window stencil and those of tests 7 and 8 by using strip stencil.

2. Put the window stencil on the answer sheet in such a way that you will see the first and last serial numbers of each test through the punched holes. This ensures that the answer sheet and stencils are properly superimposed.

3. With a red ball pen, put a vertical line on the alphabet on the answer sheet you see through every hole punched on the stencil.

4. If the red mark put by you and the underlining done by pupils coincide, it is a correct response. Put a tick mark (    / ) on the serial number of the item in the answer sheet.

If they do not coincide do not put any mark. It is an incorrect response.

If there is underlining of more than one alphabets, and none of them has been struck off as per instructions it is to be treated as incorrect, even though your red mark coincided with one of the underlines. In that case no mark is to be placed on the serial numbers.

However, if he has retained only one by striking off the others, and if it coincides with your red mark it is to be treated as correct. Put a tick mark on the serial number.

(Put only tick marks (  ) on the serial numbers of items the responses of which are correct. Do not put any mark on serial numbers of incorrect responses. This makes counting easy).

5. Count the tick marks in case of each test separately and enter them serially in the boxes (at the bottom).

6. Put the strip stencil to the left of the answers of test 7, so that the serial numbers of items in the stencil and the answer sheets are in row. Then compare the answers. Put tick marks on the serial numbers of items with correct responses. Count the tick marks and enter the number on the front page.

7. Move the strip stencil to the right so that the serial numbers of test 8 on the stencil and answersheet are in a row. Compare the answers and put tick marks on the serial numbers of items whose both the responses agree with those on the stencil. If one of the responses is incorrect the whole item is to be treated as incorrect. Count the tick marks and enter the number on the front page.

8. The correction may also be made by comparing the answers with the key given at the end of the manual.

9. Put the total of the marks obtained in eight tests in the last box keeping the last but one box vacant. This is the score of the individual on the test.

10. From the birth date given, calculate his age. Treat more than 12 years 6 months and less than 13 years 6 months as 13 years.

more than 13 yrs. 6 months and less than 14 yrs. 6 months as 14 yrs.  
 14 yrs. 6 months " 15 yrs. 6 months as 15 yrs.  
 15 yrs. 6 months " 16 yrs. 6 months as 16 yrs.  
 16 yrs. 6 months " 17 yrs. 6 months as 17 yrs.

11. From the conversion table given below find the IQ corresponding to the score earned, for that particular age group.

Suppose a pupil of age 17 has obtained 85 as his score,

In column 1 find the score 85. There are five numbers in that row. The age of the pupil is 17 years. The number in column "17 years" in that row is 110. IQ of the individual is 110.

Table. Conversion Table of Raw Scores into IQs.

Raw Score	IQs corresponding to the raw scores of age group				
	13 yrs.	14 yrs.	15 yrs.	16 yrs.	17 yrs.
40 & below	70	70	70	70	70
41	71	70	70	70	70
42	73	70	70	70	70
43	74	71	70	70	70
44	75	73	70	70	70
45	76	74	71	70	70
46	77	75	73	70	70
47	78	76	74	71	70
48	79	77	75	73	70

(continued on next page)

Table. (continued)

1	2	3	4	5	6
49	80	78	76	74	71
50	81	79	77	75	73
51	82	80	78	76	74
52	83	81	79	77	75
53	84	82	80	78	76
54	85	83	81	79	77
55	86	84	82	80	78
56	87	85	83	81	79
57	88	86	84	82	80
58	89	87	85	83	81
59	90	88	86	84	82
60	92	89	87	85	83
61	93	90	88	86	84
62	94	92	89	87	85
63	95	93	90	88	86
64	96	94	92	89	87
65	97	95	93	90	88
66	98	96	94	92	89
67	99	97	95	93	90
68	100	98	96	94	92
69	101	99	97	95	93

(continued on next page)

Table. (continued)

1	2	3	4	5	6
70	102	100	98	96	94
71	103	101	99	97	95
72	104	102	100	98	96
73	105	103	101	99	97
74	106	104	102	100	98
75	107	105	103	101	99
76	108	106	104	102	100
77	110	107	105	103	101
78	111	108	106	104	102
79	112	110	107	105	103
80	113	111	108	106	104
81	114	112	110	107	105
82	115	113	111	108	106
83	116	114	112	110	107
84	117	115	113	111	108
85	118	116	114	112	110
86	119	117	115	113	111
87	120	118	116	114	112
88	121	119	117	115	113
89	122	120	118	116	114
90	123	121	119	117	115

(concluded on next page)

Table. (concluded)

1	2	3	4	5	6
91	124	122	120	118	116
92	125	123	121	119	117
93	126	124	122	120	118
94	127	125	123	121	119
95	129	126	124	122	120
96	130	127	125	123	121
97	130	129	126	124	122
98	130	130	127	125	123
99	130	130	129	126	124
100	130	130	130	127	125
101	130	130	130	129	126
102	130	130	130	130	127
103	130	130	130	130	129
104 & above	130	130	130	130	130

N.B.: -IQ 130 indicates 130 or above.

कसोटी पुरानची उम्तरै

पुरान क्र.	कसोटी क्रमांक								
	१	२	३	४	५	६	७		
१	ब	क	क	ड	ड	ब	३	३५, ४०	
२	अ	क	ब	क	ब	क	१३२	१६, १५	
३	ड	ब	ब	ड	ब	क	१००	२७, २९	
४	अ	ब	क	क	क	क	२	१२, १०	
५	अ	ब	ब	ड	क	अ	१	१२, ८	
६	क	ड	ड	क	अ	अ	३	७०७, ८०८	
७	अ	ड	ब	क	ड	क	४	६४, १२८	
८	ड	ब	ब	क	ड	क	८	२०, २७	
९	व	ब	अ	ड	क	अ	९	$\frac{१९}{११}, \frac{१९}{९}$	
१०	ड	व	अ	ब	अ	ब	१३	१३, १३	
११	ड	ड	अ	क	ब	क	५०	७८, ८९	
१२	क	ब	ड	क	क		४५	$\frac{२३}{११}, \frac{२४}{९}$	
१३	ब	ड	ब	अ	ब		९	$\frac{१}{४}, \frac{१}{८}$	
१४	ड	क	ड	अ	अ		६	०.००९, ०.०००९	
१५	ड	ड	अ	अ	ड		३३	९, २	
१६	ब	क	अ	ब			२०	२२, ५	
१७	क	अ	क	क			२	७३७, ८२८	
१८	ब	ब	ड	ड			४०		

कसोटी प्रश्नची उत्तरे

प्रश्न क्र.	कसोटी क्रमांक							
	१	२	३	४	५	६	७	८
१९	अ	ड	क	ड				
२०	क	अ	क	क				
२१	अ	क	अ	क				
२२	क	अ		अ				
२३	अ	क		अ				
२४	ब	अ		अ				