

ENGLISH -HINDI	13-15
	Code

Roll No.	रोल नम्बर
Booklet Number	पुस्तिका संख्या

MENTAL ABILITY TEST
(For Students of Class X)

Time: 45 Minutes Max. Marks: 50

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you open the question booklet.

- Answers are to be given on a separate answer sheet.
- Please follow the instructions given on the answer sheet for marking the answers.
- Write your eight-digit Roll Number as allotted to you in the admission card very clearly on the test-booklet and darken the appropriate circles on the answer sheet as per instructions given.
- Write down and darken Booklet Number in the appropriate circles on the answer sheet as per instructions given.
- There are 50 questions in this test. All are compulsory.
- Since the time allotted for this question paper is very limited you should make the best use of it by not spending too much time on any one question.
- Rough work can be done anywhere in the booklet but not on the answer sheet/loose paper.
- Every correct answer will be awarded one mark.
- THERE WILL BE A DEDUCTION OF 1/3 MARKS FOR EVERY WRONG ANSWER AND NO MARKS WILL BE DEDUCTED FOR UNATTEMPTED QUESTIONS.**
- Please return only the answer sheet to the invigilator after the test.
- English version of the question paper will be considered as final in case of any dispute arising out of variation in translated version.

PLEASE TURN OVER THE PAGE AND START YOUR WORK

बौद्धिक योग्यता परीक्षा

(कक्षा X के विद्यार्थियों के लिए)

समय: 45 मिनट अधिकतम अंक: 50

परीक्षार्थियों के लिए अनुदेश

प्रश्न पुस्तिका खोलने से पहले, पिन अनुदेशों को ध्यान से पढ़िए:

- उत्तर एक अलग उत्तर-पत्रक में देने हैं।
- कृपया उत्तर चिह्नित करने के लिए उत्तर-पत्रक पर दिए गए अनुदेशों का अनुपालन कीजिए।
- कृपया अपना आठ-अंकीय रोल नंबर, जैसा कि आपने प्रवेश पत्र पर दिया गया है, अनुदेशानुसार प्रश्न-पुस्तिका और उत्तर-पत्रक पर बहुत स्पष्ट रूप से लिखिए और दिए गए उपयुक्त गोले को काला कीजिए।
- कृपया उत्तर-पत्रक में उपयुक्त खाने में निर्देशानुसार पुस्तिका संख्या लिखिए तथा उपयुक्त गोले को काला कीजिए।
- इस परीक्षा में 50 प्रश्न हैं। सभी प्रश्न अनिवार्य हैं।
- क्योंकि इस प्रश्न पत्र के लिए निर्धारित समय बहुत सीमित है, इसलिए इसका सर्वोत्तम उपयोग कीजिए और किसी प्रश्न पर बहुत समय न लगाइए।
- रफ़ कार्य पुस्तिका में कहीं भी किया जा सकता है, किन्तु उत्तर-पत्रक/अलग कागज पर नहीं।
- प्रत्येक सही उत्तर का एक अंक प्रदान किया जाएगा।
- प्रत्येक गलत उत्तर के लिए 1/3 अंक काटा जाएगा और किसी प्रश्न का उत्तर न देने पर उसके लिए कोई अंक नहीं काटा जाएगा।
- कृपया परीक्षा के पश्चात केवल उत्तर-पत्रक ही निरीक्षक को वापस कीजिए।
- अनुचित विवरण में अंतर से उठे किसी भी विवाद को रिवीज में प्रश्न पत्र के अंतिम विवरण को निर्णायक मान लें। कृपया पृष्ठ पलटिए और अपना कार्य आरम्भ कीजिए।

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MENTAL ABILITY TEST (MAT)

1. Some translated words in an artificial Language(in which the word order is not necessarily same) are given below
- | | | | |
|-----|-----|-----|------------------|
| mie | pie | sie | good person sing |
| pie | sie | rie | sing good lyrics |
| tie | rie | sie | love good lyrics |
- What is the translation for 'person love lyrics' ?

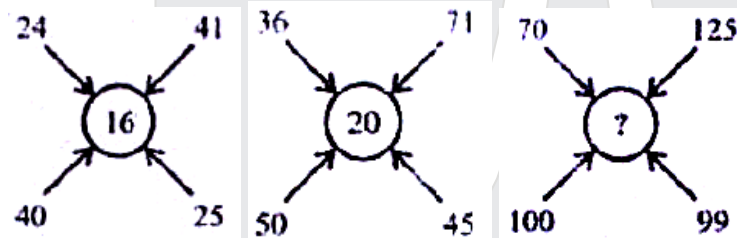
- (1) pie tie rie (2) tie rie sie (3) rie mie tie (4) sie mie pie

2. In the given sequence, some letters are missing. Which of the given options can fill the blanks in the correct order from left to right ?

ab_ab_aaa_bbaaa_bbbb

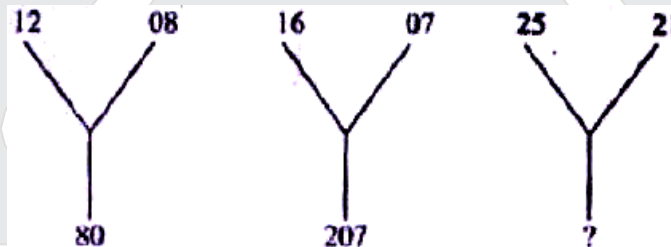
- (1) abab (2) abba (3) aabb (4) baba

3. Identify the number in the position of " ? " .



- (1) 24 (2) 28 (3) 32 (4) 36

4. Find the missing number.



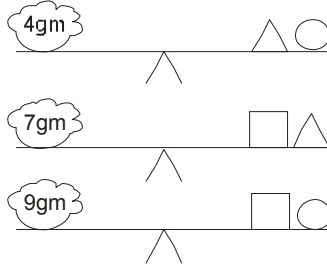
- (1) 184 (2) 210 (3) 241 (4) 425

5. If A, B, C, D are distinct decimal digits, then which of the following option is correct ?

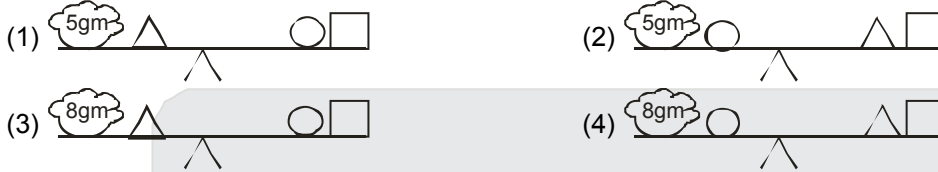
$$\begin{array}{r}
 A4BC \\
 \times C \\
 \hline
 1A1DC
 \end{array}$$

- (1) A = 3 B = 7 C = 5 D = 9 (2) A = 2 B = 3 C = 6 D = 5
 (3) A = 3 B = 8 C = 6 D = 5 (4) A = 2 B = 3 C = 5 D = 7

6. Observe the following figure representing a balance.



Which of the following figure represents the correct balance ?



7. Choose appropriate option from given alternatives such that the relationship defined by ‘:’ is preserved.
PNLJ : LIFC and VTRP :

- (1) ROLI (2) SOLH (3) RPOM (4) DMEN

8. A coin is in a fixed position. Another identical coin is rolled around the edge of the first one. How many complete revolutions will be made by the revolving coin before it reaches its starting position ?



- (1) 1 (2) 2 (3) 3 (4) 4

9. If South-East becomes North ; and North-East becomes West; then West becomes

- (1) North – East (2) South – East (3) North – West (4) South – West

10. A cube is 6 cm in length, breadth and height. It is painted red on two opposite faces, black on the other two opposite faces and green on the left over faces. It is then cut into 216 cubes of sides 1 cm. How many small cubes have no face painted ?

- (1) 16 (2) 8 (3) 64 (4) 24

11. Find the odd-one out of the following terms :

- (1) EF22 (2) GH24 (3) IJ38 (4) VW90

12. Choose the conclusions which logically follows from the given statements.

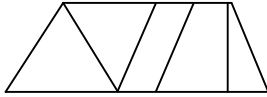
Statement :

- All the pens are papers
- All the papers are boats
- Some birds are boats.

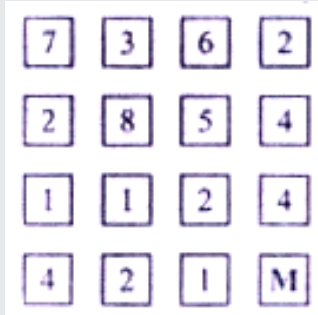
Conclusion :

- A. Some boats are pens
- B. Some birds are papers
- C. None of the pens are birds
- (1) Only A and B (2) Only A (3) Only C (4) Only A and C

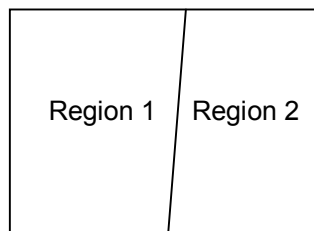
13. How many quadrilaterals are there in the given figure ?



- (1) 10 (2) 11 (3) 12 (4) 13
14. Which of the following alternatives will fit in place of 'M' ?
255,3610,4915,M,8125
(1) 5100 (2) 5420 (3) 6420 (4) 6422
15. Which of the following alternatives will fit in place of 'M' ?
L6 , O8 , R11 , M , X25 , A42, D75
(1) U15 (2) U16 (3) W14 (4) U14
16. Which of the following alternatives will fit in place of 'M' ?



- (1) 6 (2) 5 (3) 4 (4) 3
17. If 'Σ' means 'X', 'δ' mean '÷', 'σ' means '+' and '∞' means '-' then evaluate the following expression using standard operator precedence.
 $56\delta (6\sigma 8) \Sigma 4 \infty 1$
(1) 52 (2) 24 (3) 15 (4) 43
18. With what operators, should the symbols @ and < be replaced so that the following expression is valid.
 $100-81\div 27 @ 3 < 6 = 115$
(1) + and - (2) x and ÷ (3) + and × (4) ÷ and -
19. x is an integer such that it leaves a remainder of 2 when divided by 3, leaves a remainder of 3 when divided by 5, and leaves a remainder of 5 when divided by 7. What could be a possible value of x from among the following options ?
(1) 53 (2) 68 (3) 74 (4) 83
20. In how many ways can you distribute 10 identical balls, into two non-identical boxes so that none are empty ?
(1) 2 (2) 8 (3) 9 (4) 10
21. One line forms two regions in a plane. Similarly, two lines in a plane can form a maximum of four regions. These are shown in the figures below :



What is the maximum number of regions that can be formed by 4 lines in a plane ? lines need not be concurrent.

- (1) 7 (2) 8 (3) 10 (4) 11
22. You need to take n arbitrary points on or inside a square of side 2cm such that there will always be a pair of points at a distance of not more than $\sqrt{2}$ cm. What is the minimum value of n ?
(1) 2 (2) 4 (3) 5 (4) 8

23. The following facts are known about an unknown number X :
I : The sum of digits of X is 15.
II : The unit's digit of X is 6 .
Then which of the following statement is certainly true about X ?
(1) X is divisible by 3 but not by 6
(2) X is divisible by 6 but not by 9
(3) X is not divisible by 6 but divisible by 9
(4) X is divisible by both 6 and 9
24. The average age of A,B and C is 43 years. Which of the following statements are required to find the eldest among them ?
Statement
I. Age of C is 65 years.
II. Age of A is 25 years.
(1) I is sufficient
(2) Both I and II are required
(3) I and II together are not sufficient
(4) II is sufficient

Direction (Questions 25-26)

A class is to be taught five subject- Hindi, Physics, Chemistry, Biology and Mathematics by five different teachers –A,B, C, D, and E in five periods (1 to 5). A teacher can teach in only one of the periods. The following details are available about the teaching.

- A teaches mathematics which is not taught in the first period.
- Physics is taught by D in an even numbered period.
- Chemistry is taught in a odd period, and it precedes mathematics period.
- E teaches in the first period.
- C teaches Chemistry but not in the first or the last periods.
- Hindi is taught in the last period.

25. Which of the following statements is necessarily true ?
(1) Third period is of Hindi taught by B
(2) Second period is of Physics taught by C
(3) Fourth period is of Mathematics taught by A
(4) Fifth period is of Biology taught by D
26. Which subject is taught by B ?
(1) Physics
(2) Chemistry
(3) Biology
(4) Hindi
27. A solid metallic cylinder of radius 12 cm and height 175 cm is melted and moulded into another solid cylinder of height 63 cm. What is the radius of the new cylinder ?
(1) 14
(2) 4π
(3) 20
(4) 5π
28. Choose the option which shows the correct mirror image of the characters given below.

DIVERT6475ALE

- (1) DIAEBT9472VGE
(2) DIAEBT9472VGE
(3) DIAEBT9472VGE
(4) DIAERT9472VGE

Direction (Questions 29-30)

There are 150 students in a class. 20 students play both hockey and kabaddi. The same numbers of students play only football. 35 students play both hockey and football but not kabaddi. 25 play both football and kabaddi but not hockey. The number of students who play only hockey is the same as the number of students who do not play any of the three mentioned games and the number of students who play only hockey is half of the number of students who play only football.

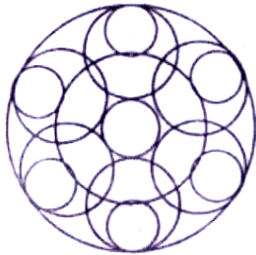
29. How many students play only kabaddi ?
 (1) 10 (2) 20 (3) 30 (4) 40
30. How many students play only hockey ?
 (1) 10 (2) 15 (3) 20 (4) 25

31. What will be the number in the blank box ?

1	3	4	6	7	9
2	14	5	77	8	

- (1) 98 (2) 128 (3) 189 (4) 194

32. What is the total number of circles in the figure given below ?

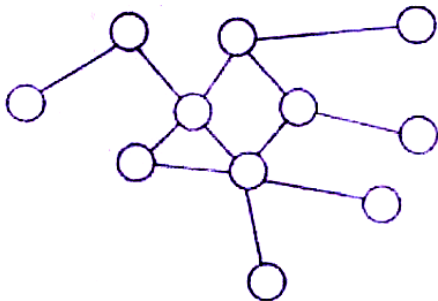


- (1) 13 (2) 14 (3) 15 (4) 16

33. A bucket contains milk mixed with water, of which 3 parts are water and 5 parts are milk. A part of the mixture is removed from the bucket and is replaced by water. What portion of the mixture should have been removed so that the new mixture contains milk and water in equal proportion ?

- (1) $\frac{1}{3}$ (2) $\frac{1}{4}$ (3) $\frac{1}{5}$ (4) $\frac{1}{6}$

34. You need to colour the circles in such a way that no two circles connected by a line get the same colour. What is the minimum number of distinct colours needed to colour all the circles in the figure ?



- (1) 4 (2) 5 (3) 6 (4) 7

35. From each box you can move only to the immediate right box or the immediate top box. You cannot move into or through a shaded box. How many ways are there to move from the box marked S to the box marked D ?

			D
S			

- (1) 8 (2) 10 (3) 12 (4) 14

36. Which number will come in the place of 'M' ?

16	7	2	20
25	8	2	30
36	9	5	24
49	10	7	M

- (1) 21 (2) 32 (3) 40 (4) 63

37. The square of the length of a rod AB is 72 cm^2 . If we place the rod in the corner of a room, so that the end A is always on the edge between the two walls of the corner and the end B is always on the floor, what is the maximum possible area of the triangle formed by the rod, the edge between the walls and the floor ?

- (1) 6cm^2 (2) 12cm^2 (3) 18cm^2 (4) 24cm^2

38. What is the missing term (?) in the following series ?

2,6,6,5,10,4,14,3,18, ?

- (1) 1 (2) 2 (3) 19 (4) 22

39. In the question given below, there are two statements followed by two conclusions. You have to take the given statements to be true even if they seem to be at variance from commonly known facts, Read all the conclusions, and then decide which of the given conclusions logically follows from the given statements ?

Statement :

- I. Some kings are beautiful.
II. All the queens are kings.

Conclusions :

- (i) All the kings are beautiful.
(ii) All the queens are kings.

- (1) Only I follows (2) Only II follows
(3) Neither I nor II follows (4) Both I and II follows

40. If prime numbers are assigned to English alphabets from A to Z in order, MAT will be

- (1) 31 1 67 (2) 41 1 67 (3) 37 2 71 (4) 41 2 71

41. What number comes inside the square in place of 'X' ?



- (1) 5 (2) 6 (3) 7 (4) 8

42. Find the alphabet that will replace ?

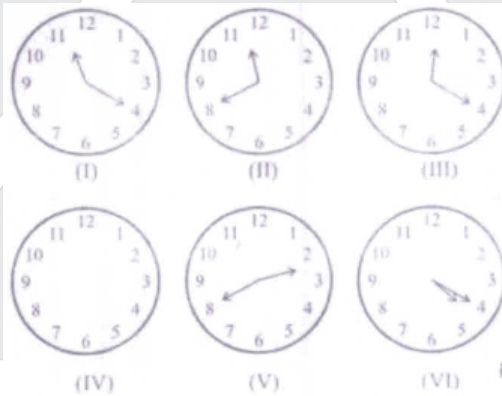
I	2	2	3	1	5
II	3	4	2	4	2
III	II	P	1	?	Y

- (1) A (2) D (3) O (4) N

43. In a certain language IMPHAL, is coded as JLRFDI. How will MYSURU be coded in the same language ?

- (1) NXUSUR (2) RUSUXN (3) NXSUUR (4) NXTTUR

44. What time should the IV clock show ?



- (1) 1 : 00 (2) 1 : 20 (3) 1 : 40 (4) 2 : 00

45. How many crosses should be there in the box marked with " ? " ?



- (1) 1 (2) 2 (3) 3 (4) 4

46. Find the missing term.

a, b, d, _____, p

- (1) h (2) i (3) j (4) K

47. A is East of B and West of C, D is South-West of C, and B is South-East of E.
When seen from West to East, which of the following sequences are possible ?
I : EBDAC
II : DEBAC
III : EBADC
IV: EDBAC
(1) I, I and III (2) I, III and IV (3) I,II and III (4) all I, II, III and IV
48. A, B, C, and D are to be seated in a row. C and D cannot be on adjacent seat. Also, B cannot be at the third place.
Which of the following must be false ?
(1) A is at the fourth place (2) A is at the third place
(3) A is at the second place (4) A is at the first place
49. Mrs. Kirandeep, a driving instructor, has to arrange training schedule for some of her pupils. She has 8 new pupil who wish to book either a morning or evening of a particular day. The appointment can be given for Tuesday, Wednesday, Friday and Saturday. The instructor instructs only one pupil in morning and one in the evening session.
- Mrs. Sabita is only available Tuesday morning but Mr. Aaditya can make any time on a Wednesday,
 - Mrs. Firdaus is free on Tuesday all day but Mr. Naved is only free Wednesday evening.
 - Mrs. Seema is only a available Friday morning whereas Mrs. Ritu can only make Saturday evening.
 - Mrs. Shalu is available all day Fridays whereas Mr. Ronald can make any time on a Saturday.
- Which of the following two should have morning appointments ?
(1) Mr. Ronald and Mrs. Shalu
(2) Mr. Ronald and Mrs. Firdaus
(3) Mr. Aadita and Mrs. Firdaus
(4) Mr. Aaditya and Mr. Ronald
50. Just before sunset Veena and Zeba were talking to each other standing face-to-face. If Veena sees Zeba's Shadow to be exactly towards the right of Zeba, which direction was Veenna facing?
(1) South (2) North (3) East (4) North-East



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