

राष्ट्रीय प्रतिभा खोज परीक्षा (प्रथम स्तर) 2019
NATIONAL TALENT SEARCH EXAMINATION (FIRST LEVEL) 2019

410 - A

Roll No. रोल नम्बर

Booklet Number पुस्तिका संख्या

MENTAL ABILITY TEST
(For Students of Class X)

Time : 120 Minutes Max. Marks : 100
(For Blind Candidates Time : 2 Hours 30 Minutes)

INSTRUCTIONS TO CANDIDATES

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

1. Answers are to be given on a **separate answer sheet (OMR sheet)**.
2. Please write your **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.
3. There are 100 questions in this test. All are compulsory.
4. Please follow the instructions given on the answer sheet for marking the answers.
5. If you do not know the answer to any question, do not waste time on it and pass on to the next one. Time permitting, you can come back to the questions, which you have left in the first instance and attempt them.
6. 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.
7. **Rough work** can be done **on the given Blank Pages at the back of the booklet** but not on the answer sheet/loose paper.
8. Every correct answer will be awarded one mark. There will be no negative marking.
9. **Please return the Answer sheet (OMR) only to the invigilator after the test.**
10. Hindi 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 : 120 मिनट पूर्णांक : 100
(दृष्टिहीन अभ्यर्थियों के लिए समय : 2 घंटे 30 मिनट)

परीक्षार्थियों के लिए निर्देश

प्रश्न पुस्तिका खोलने से पहले निम्न निर्देशों को ध्यान से पढ़िए।

1. उत्तर एक अलग उत्तर-पत्रक (ओ० एम० आर० शीट) में देने हैं।
2. कृपया अपना रोल नम्बर जैसा कि आपके प्रवेश पत्र पर दिया गया है, निर्देशानुसार टेस्ट पुस्तिका पर बहुत स्पष्ट लिखिये और उत्तर-पत्रक पर दिये गये गोलों को काला करें।
3. इस परीक्षा में 100 प्रश्न हैं। सभी प्रश्न अनिवार्य हैं।
4. कृपया उत्तर चिह्नित करने के लिए उत्तर-पत्रक पर दिये गये निर्देशों को ध्यान से समझ कर उनकी अनुपालना कीजिए।
5. यदि आप किसी प्रश्न का उत्तर नहीं जानते हैं तो उस पर बहुत समय न गंवाइये और अगले प्रश्न पर बढ़ जाइये। यदि बाद में समय मिले तो जिन प्रश्नों को आपने पहले छोड़ दिया था, उन पर वापस आकर उनके उत्तर दीजिए।
6. क्योंकि इस प्रश्न पत्र के लिए निर्धारित समय बहुत सीमित है, इसलिए इसका अधिकतम उपयोग कीजिये और किसी प्रश्न पर बहुत समय न लगाइये।
7. रफ कार्य पुस्तिका के अंत में दिये गये रिक्त पृष्ठों पर किया जा सकता है किन्तु उत्तर-पत्रक/अलग कागज पर नहीं।
8. प्रत्येक सही उत्तर का एक अंक प्रदान किया जाएगा। इसमें ऋणात्मक अंकन नहीं होगा।
9. कृपया परीक्षा के बाद केवल उत्तर-पत्रक (ओ० एम० आर०) ही निरीक्षक को लौटाइए।
10. अनुवादित विवरण में अन्तर से उठे किसी भी विवाद की स्थिति में प्रश्न-पत्र के हिन्दी अनुवाद को निर्णायक माना जाएगा।

कृपया पृष्ठ पलटिये और अपना कार्य आरम्भ कीजिए।

BSER 2019

The copyright of the contents of this booklet rests with the BSER and no part of it should be used by anybody in any manner whatsoever without the prior permission of the BSER. The items are prepared on best effort basis. In case of any dispute the opinion of the experts appointed by BSER will be final.

NATIONAL TALENT SEARCH EXAMINATION-2018-19, RAJASTHAN
MENTAL ABILITY TEST (MAT) PAPER & SOLUTION

Questions (1 to 8)

Instruction : In each of the Question Nos. 1 to 8 a letter series is given with one term missing shown by question mark (?). This term is one of four alternatives given under it. Find the correct alternative.

1. A, D, I, ?, Y. (1) R (2) P (3) N (4) T

A, D, I, (?), V
 ↓ ↓ ↓ ↓ ↓
 1 4 9 16 25
 ↓ ↓ ↓ ↓ ↓
 (1)² (2)² (3)² (4)² (5)²

16 place → P

Ans. (2)

2. YX, UT, QP, ML, ?. (1) HI (2) JI (3) HG (4) IH

Y X, U T, Q P, M L, I H
 25,24 21,20 17,16 13,12 9,8
 ↑ ↑ ↑ ↑ ↑
 -1 -3 -1 -3 -1 -3 -1 -3 -1

Ans. (4)

3. ACF, GIL, ?, SUX. (1) NPS (2) MOR (3) MNQ (4) MOQ

A C F, G I L, M O R, S U X
 ↑ ↑ ↑ ↑ ↑ ↑ ↑
 +2 +3 +1 +2 +3 +1 +2 +3 +1 +2 +3

Ans. (2)

4. YB, WD, UF, ?, QJ. (1) SH (2) TI (3) RH (4) HS

Y B, W D, U F, S H, Q J
 -2 -2 -2 -2
 25, 2 23, 4 21, 6 19, 8 17, 10
 ↓ ↓ ↓ ↓ ↓
 27 27 27 27 27

Ans. (1)

5. ABC, EFG, IJK, ?, UVW. (1) MNO (2) PQR (3) OPQ (4) QRS

Sol. First letter is vowel. Remaining letters are increases by +1.

A B C, E F G, I J K, O P Q, U V W
 1, 2, 3 5, 6, 7 9, 10, 11 15, 16, 17 21, 22, 23

Ans. (3)

-

Sol.

A B C D,	B D F H,	C F I L,	D H L P,	E J O T
1 2 3 4	2 4 6 8	3 6 9 12	4 8 12 16	5 10 15 20

$\overset{+1}{\curvearrowright}$ $\overset{+1}{\curvearrowright}$ $\overset{+1}{\curvearrowright}$ $\overset{+1}{\curvearrowright}$

$\underset{+2}{\curvearrowleft}$ $\underset{+3}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+2}{\curvearrowleft}$ $\underset{+3}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+2}{\curvearrowleft}$ $\underset{+3}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$

Ans. (3)

7. D, H, L, P, T, ?.
 (1) W (2) X (3) Y (4) U

Sol.

D, H, L, P, T, X
4, 8 12, 16 20 24
$\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$

Ans. (2)

8. ZYAB, VUEF, RQIJ, ?, JIQR.
 (1) NMNM (2) MNMN (3) MNNM (4) NMMN

Sol.

Z Y A B,	V U E F,	R Q I J,	N M M N,	J I Q R
26 25 1 2	22 21 5 6	18 17 9 10	14 13 13 14	10 9 17 18

$\overset{-4}{\curvearrowright}$ $\overset{-4}{\curvearrowright}$ $\overset{-4}{\curvearrowright}$ $\overset{-4}{\curvearrowright}$

$\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$ $\underset{+4}{\curvearrowleft}$

Ans. (4)

Questions (9 to 16)

Instruction : In each of the Question Nos. 9 to 16 a number series is given with one term missing shown by question mark (?). This term is one of the four alternatives given under it. Find the correct alternative.

9. 1, 2, 6, 15, ?, 56.
 (1) 31 (2) 40 (3) 37 (4) 45

Sol.

1, 2, 6, 15, 31 , 56
$\underset{1^2}{1}$ $\underset{2^2}{4}$ $\underset{3^2}{9}$ $\underset{4^2}{16}$ $\underset{5^2}{25}$

Ans. (1)

10. 100, 50, $33\frac{1}{3}$, 25, 20, ?.
 (1) 15 (2) $16\frac{1}{3}$ (3) $17\frac{2}{3}$ (4) $16\frac{2}{3}$

Sol.

100,	50,	$\frac{100}{3}$,	25,	20,	$\frac{50}{3}$
$\times \frac{1}{2}$	$\times \frac{2}{3}$	$\times \frac{3}{4}$	$\times \frac{4}{5}$	$\times \frac{5}{6}$	

Ans. (4) $\frac{50}{3} = 16\frac{2}{3}$

11. 17, 16, 8, ?, -83
 (1) -1 (2) -8 (3) -19 (4) -26

$$\underbrace{17, 16, 8, \boxed{-19}, -83}_{\substack{-1 \quad -8 \quad -27 \quad -64 \\ -(1)^3 \quad -(2)^3 \quad -(3)^3 \quad -(4)^3}}$$

Sol. Ans. (3)

12. 6, 24, 60, 120, ?.
 (1) 180 (2) 195 (3) 210 (4) 225

Sol.
$$\begin{array}{cccccc} 6, & 24, & 60, & 120, & \mathbf{210} \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 2^3-2, & 3^3-3 & 4^3-4 & 5^3-5 & 6^3-6 \end{array}$$

 Ans. (3)

13. 49, 64, 56, 57, 63, ?, 70, 43.
 (1) 64 (2) 50 (3) 52 (4) 67

Sol.
$$\begin{array}{cccccccc} 49 & 64 & 56 & 57 & 63 & 50 & 70 & 43 \\ \downarrow & \downarrow \\ 7 \times 7 & 7 \times 8 & 7 \times 9 & 7 \times 10 & & & & \end{array}$$

Ans. (2)

14. 4, 13, 31, 67, ?, 283.
 (1) 139 (2) 103 (3) 121 (4) 169

Sol.
$$\begin{array}{cccccc} 4 & 13 & 31 & 67 & 139 & 283 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 9 & 18 & 36 & 72 & 144 & \\ \times 2 & \times 2 & \times 2 & \times 2 & & \end{array}$$

Ans. (1)

15. 1, 1, 2, 3, 5, 8, ?, 21.
 (1) 11 (2) 12 (3) 13 (4) 14

Sol. 1, 1, 2, 3, 5, 8, 13, 21

Fibonacci series $\rightarrow 1 + 1 = 2, 1 + 2 = 3, 2 + 3 = 5, 3 + 5 = 8$
 $8 + 5 = 13, 8 + 13 = 21$

Ans. (3)

16. 3, 24, 81, ?, 375, 648.
 (1) 128 (2) 256 (3) 169 (4) 192

Sol. 3, 24, 81, 192, 375, 648

$$\begin{array}{l} \boxed{3} \times \boxed{1} = 3 \\ \boxed{6} \times \boxed{4} = 24 \\ \boxed{9} \times \boxed{9} = 81 \\ \boxed{12} \times \boxed{16} = 192 \\ \boxed{15} \times \boxed{25} = 375 \\ \boxed{18} \times \boxed{36} = 648 \end{array}$$

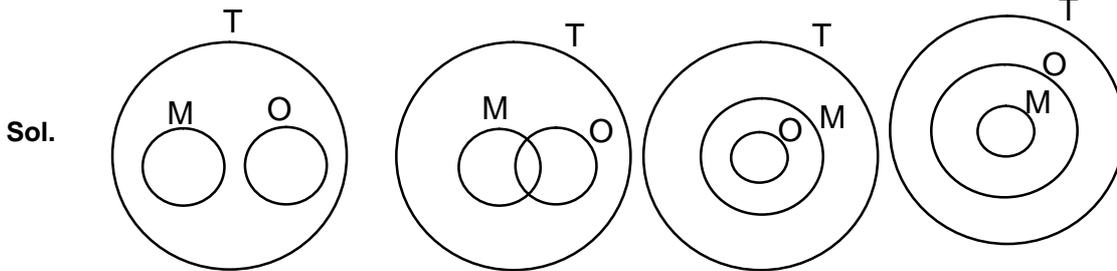
Multiple of
of square
3

Ans. (4)

Questions (17 to 19)

Instruction : Question Nos. 17 to 19 have two statements and two conclusions I and II. You have to assume the given statements as true even if it seems to vary to commonly known facts. Read all the conclusions carefully and decide which of the given conclusions logically follow(s) from the two given statements even disregarding commonly known facts.

17. **Statements :** (i) : All mangoes are trees.
 (ii) : All oranges are trees.
Conclusions (I) : Some mangoes are oranges.
 (II) : All oranges are mangoes.
 (1) Only conclusion I follows. (2) Only conclusion II follows
 (3) Both conclusions I and II follow (4) Neither conclusion I nor II follows.



C-I → Not follow C-II → Not follow

Ans. (4)

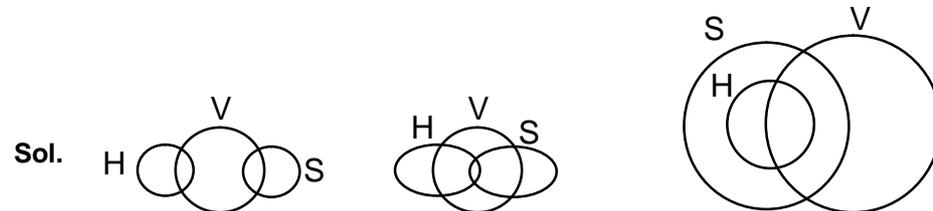
18. **Statements :** (i) : Earth is smaller than Moon.
 (ii) : Moon is bigger than Sun.
Conclusions (I) : Sun is bigger than Earth.
 (II) : Earth and Sun are equal.
 (1) Only conclusion I follows (2) Only conclusion II follows.
 (3) Both conclusions I and II follow. (4) Neither conclusion I nor II follows.

Sol. Earth < Moon > Sun ← Statement

C-I → Cannot say C-II → Cannot follow

Ans-(4)

19. **Statements :** (i) : Some houses are vehicles
 (ii) : Some vehicles are schools
Conclusions (I) : Some houses are schools
 (II) : Some schools are houses.
 (1) Only conclusion I follows (2) Only conclusion II follows.
 (3) Both conclusions I and II follow. (4) Neither conclusion I nor II follows.



C-I → Not follow C-II → Not follow

Ans-(4)

24. In a coded language, 'ACE' is written as '1925' and 'BIG' is written as '48149', then in the same language, 'DOG' will be written as

- (1) 41549 (2) 1622549 (3) 162259 (4) 42249

Sol.

A	C	E	B	I	G	D	O	G
1	3	5	2	9	7	4	15	7
↓	↓	↓	↓	↓	↓	↓	↓	↓
1 ²	3 ²	5 ²	4	81	49	16	225	49
↓	↓	↓						
1	9	25						

 Ans. (2)

25. In a coded language, 'SHOULDER' is written as 'TJSNMAGZ' and 'BOXING' is written as 'RSYCPH', then in the language, 'HORN' will be written as

- (1) JSZP (2) JSNS (3) JNZS (4) JZSP

Sol.

S	H	O	U	L	D	E	R	B	O	X	I	N	G
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
T	J	S	N	M	A	G	Z	R	S	Y	C	P	H

H O R N
 ↓ ↓ ↓ ↓
 J S Z P
 Ans. (1)

26. In a coded language 'CALLED' is written as 'DELLAC' and 'TIGER' is written as 'REGIT', then in the same language, 'NORTH' will be written as

- (1) PQSUK (2) PTTVL (3) HTORN (4) HTRON

Sol. CALLED $\xrightarrow{\text{Reverse}}$ DELLAC
 TIGER $\xrightarrow{\text{Reverse}}$ REGIT
 NORTH $\xrightarrow{\text{Reverse}}$ HTRON

Ans. (4)

27. In the given question, a statement is followed by two arguments I and II. You have to decide which of the following arguments is 'strong' or 'weak'.

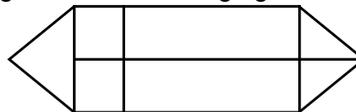
Statement : High chimneys should be installed in industries.

- Arguments :** (I) Yes, it reduces pollution at ground level.
 (II) NO, it increases pollution in upper atmosphere.

- (1) Only argument I is strong (2) Only argument II is strong
 (3) Both arguments I and II are strong (4) Both arguments I and II are weak.

Sol. (1)

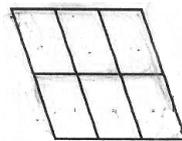
28. Determine the number of rectangles in the following figure :



- (1) 7 (2) 8 (3) 9 (4) 10

Sol. No. of rectangles = 9
 Ans. (3)

29. Determine the number of parallelograms in the following figure :



- (1) 14 (2) 17 (3) 18 (4) 19

Sol. No. of parallelogram = 18

Ans. (3) $\left(\text{Formula} \rightarrow \frac{n(n+1)}{2} \times \frac{m(m+1)}{2} \right)$

$$\begin{array}{cc} n \times m & \\ \downarrow & \downarrow \\ 2 & 3 \end{array}$$

$$\Rightarrow \frac{2 \times 3}{2} \times \frac{3 \times 4}{2} = 18$$

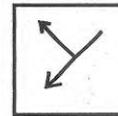
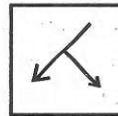
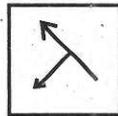
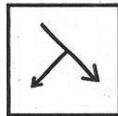
Questions (30 - 33)

Instruction : In Question Nos. 30 to 33, find the correct mirror image of the given figure, when mirror is placed on right side of the figure.

30. Question Image



Answer-Image



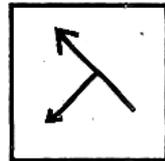
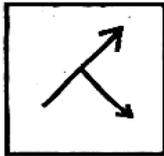
(1)

(2)

(3)

(4)

Sol.

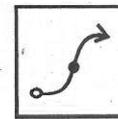
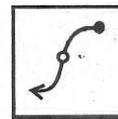
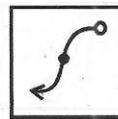
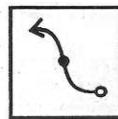


Ans. (2)

31. Question Image



Answer-Image



(1)

(2)

(3)

(4)

Sol.

(2)

32. Question Image

(1) QUNVILY

(2) YTIUAUQ

(3) YTIUAUQ

(4) YTIUAUQ

Sol.

(3)

33. 247596

(1) 695742

(2) 247596

(3) 695742

(4) 247596

Sol.

(4)

Questions (34 - 37)

Instruction : In Question Nos. 34 to 37, find the correct water- image of the given figure.

34. FAMILY

(1) YLIMAF

(2) EVMITL

(3) EVMITL

(4) EVMITL

34. (4)

35. NhRqSy

(1) YSPRIN

(2) NIPKPSY

(3) NIPKPSY

(4) YSPRIN

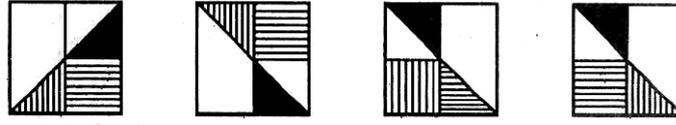
Sol.

(1)

36. Question Figure



Answer-figures

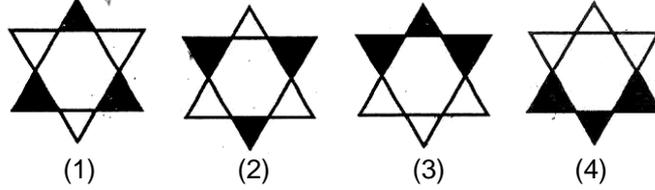


Sol. (4)

37. Questions Figure



Answer-figures

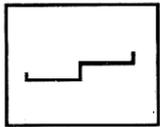


Sol. (2)

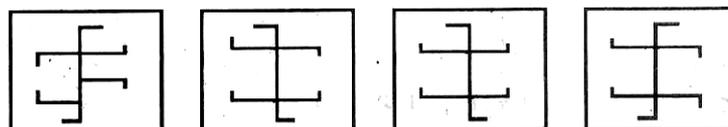
Questions (38 - 41)

Instruction : In the following Question Nos. 38 to 41, there is a question figure, which is embedded in one of the answer figures. Trace out that correct figure.

38. Question Figure

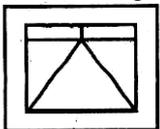


Answer-figures

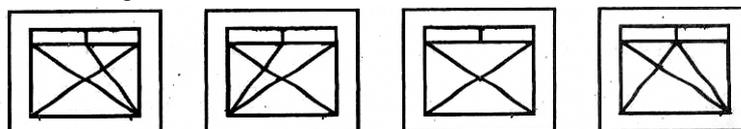


Sol. (3), (1)

39. Question Figure

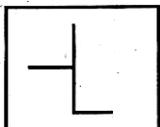


Answer-figures

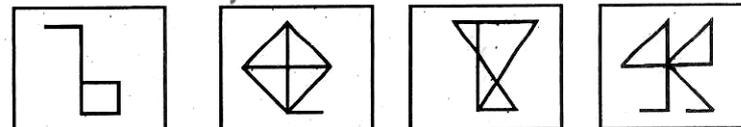


Sol. (4)

40. Question Figure

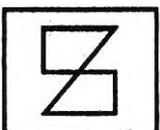


Answer-figures

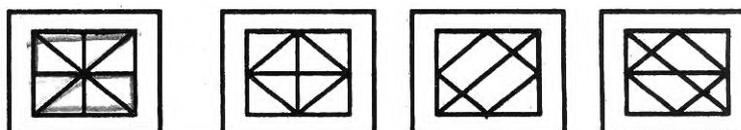


Sol. (2)

41. Question Figure

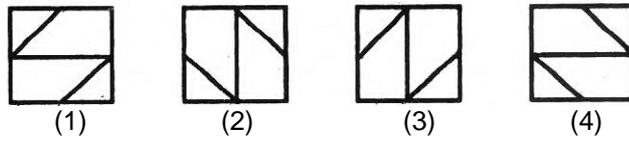
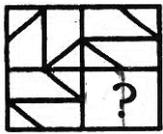


Answer-figures



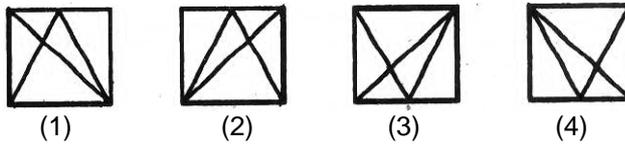
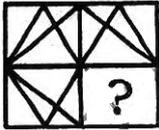
Sol. (1)

42. Which of the answer figures will complete the given matrix figure ?



Sol. (3)

43. Which of the answer figures will complete the given matrix figure ?

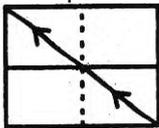


Sol. (3)

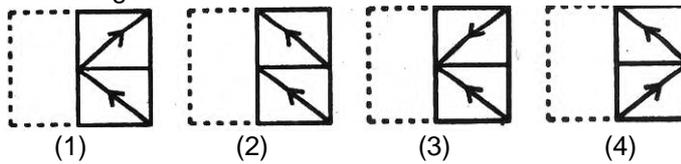
Questions (44 – 47)

Instruction : A square transparent sheet with a pattern is folded along the dotted line. Which of the following answer figures is formed after folding the transparent sheet ?

44. Transparent sheet

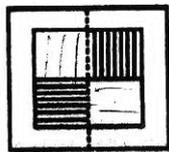


Answer figures

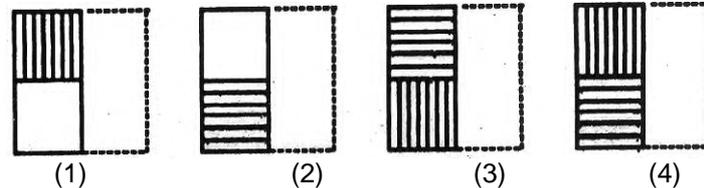


Sol. (1)

45. Transparent sheet

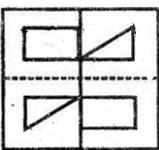


Answer figures

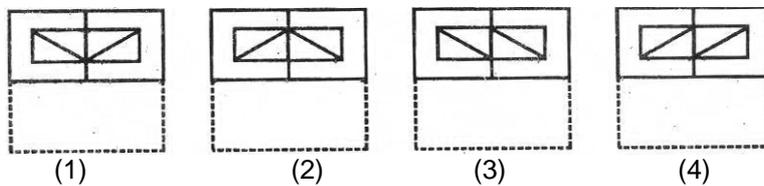


Sol. (4)

46. Transparent sheet

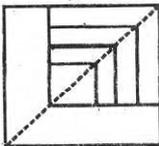


Answer figures

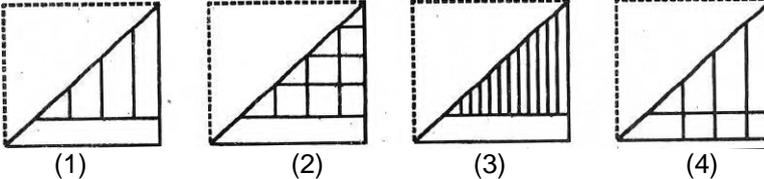


Sol. (1)

47. Transparent sheet



Answer figures

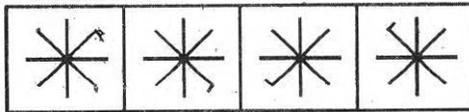


Sol. (1)

Questions (48 – 55)

Instruction : In Question Nos. 48 to 55, there are two sets of figures. One set contains problem figures while the other has answer figures. There is a sequence according to which the problem figures are arranged. You have to select an answer figure which can be added in sequence with the problem figures. Choose the correct answer figure.

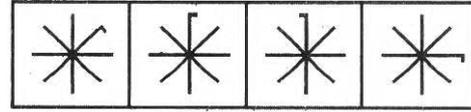
48. Problem figures



(A) (B) (C) (D)

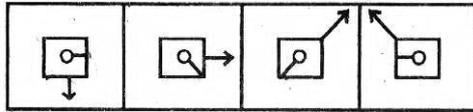
Sol. (1)

Answer figures



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

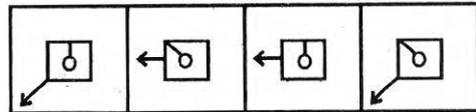
49. Problem figures



(A) (B) (C) (D)

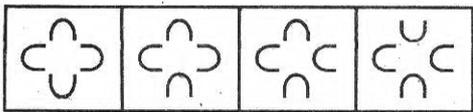
Sol. Ans. (3)

Answer figures



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

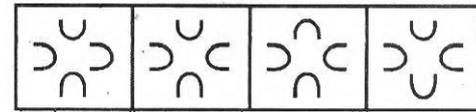
50. Problem figures



(A) (B) (C) (D)

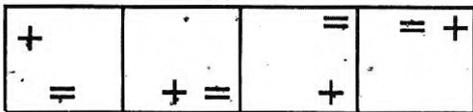
Sol. (2)

Answer figures



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

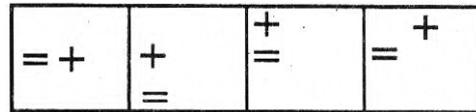
51. Problem figures



(A) (B) (C) (D)

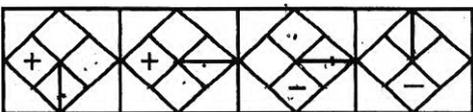
Sol. Sign '+' & '=' moves in following manner '+' moves First one side & then half side & then in respective manner '=' moves first half side then one side & Then respectively
Ans. (4)

Answer figures



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

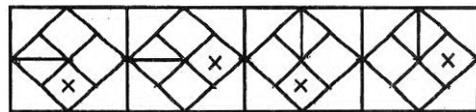
52. Problem figures



(A) (B) (C) (D)

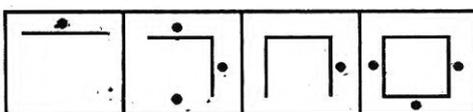
Sol. Sign '+' is constant in two figures, then '-' is constant for next two figures so in next figure new sign 'x' is will occur.
Ans. (4)

Answer figures



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

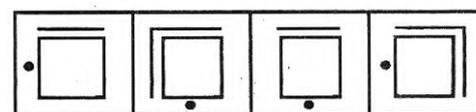
53. Problem figures



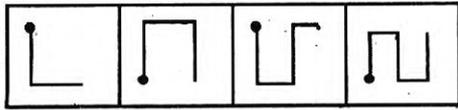
(A) (B) (C) (D)

Sol. One side is increasing in every figures & dots '•' are present in following manner. First a 'ingle dot' the '3' dots & soon
Ans. (3)

Answer figures

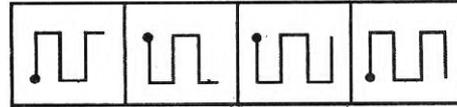


(1) (2) (3) (4)



(A) (B) (C) (D)

Sol. First flip and then add 1 side
 Ans. (2)



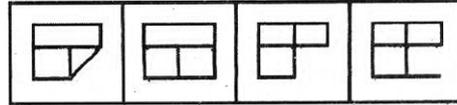
(1) (2) (3) (4)

55. Problem figures

Answer figures



(A) (B) (C) (D)



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

Sol. In each next figure the, the new line is added by the end point.

Ans. (3)

56. A family has a man, his wife, their four sons and their wives. Each son has 3 sons and 1 daughter. How many male members are there in the whole family ?

(1) 5 (2) 8 (3) 16 (4) 17

Sol. Total man = A man, his fours sons and each son has 3 rares so total man =

$$= 1 + 4 + 4 \times 3$$

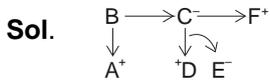
$$= 5 + 12 = 17$$

Ans. (4)

Question (57 to 60)

Read the information given below carefully.

A is the son of B. B's sister C has a son D and a daughter E. F is maternal uncle of D. Answer Question No. 57 to 60 based on this information.



+ → male

- → Female

57. How is A related to D ?

(1) Cousin (2) Nephew (3) Brother (4) Uncle.

Sol. Ans. (1) A is cousin of D

58. How is E related to F ?

(1) Sister (2) Daughter (3) Niece (4) Wife

Sol. Ans. (3)

59. How many nephews does F have ?

(1) 0 (2) 1 (3) 2 (4) 3

Sol. (3)

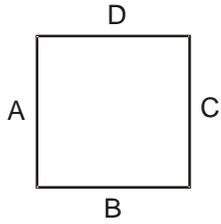
60. How is B related to F ?

(1) Brother / Sister (2) Husband (3) Father (4) Cousin

Sol. (1)

61. A, B, C, and D are playing carrom. C, A and D, B are partners. D is to the right of C. C is facing west. Then, B is facing which direction ?
 (1) North (2) South (3) East (4) West

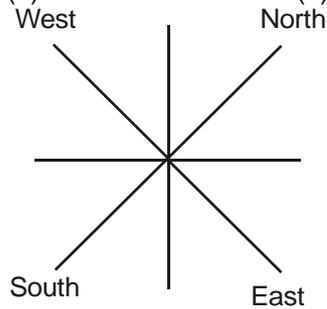
Sol.



Ans. (1)

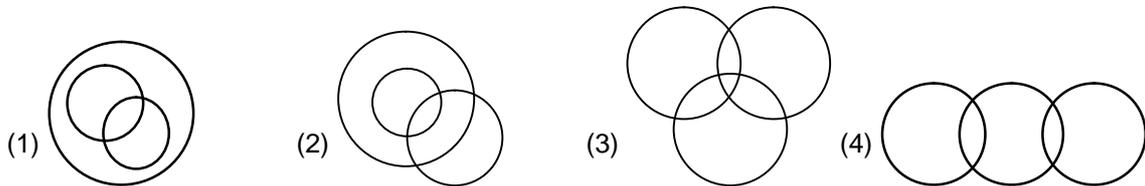
62. If 'South-east' is called 'East', 'North-West' is called 'West', 'South-west' is called 'South', then in the same way, 'North' will be called as
 (1) East (2) North-East (3) North-West (4) West

Sol.

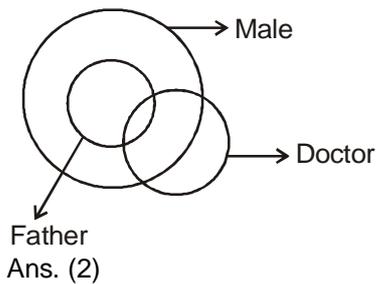


Ans. (3)

63. Which of the following Venn diagrams correctly represents Males, Fathers and doctors ?

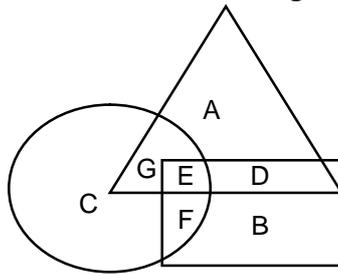


Sol.



Questions (64 – 67)

Instruction : Answer Question Nos. 64 to 67 based on the diagram given below:



In Above figure, triangle shows rural women, rectangle shows unemployed women and circle shows educated women.

- 64.** Educated, employed and rural women are represented by
 (1) D (2) E (3) F (4) G.

Sol. Common part of triangle and circle.
 Ans. (4)

- 65.** What does D represent ?
 (1) Educated rural women (2) Uneducated, unemployed and rural women
 (3) Educated unemployed women (4) Educated employed women

Sol. (2)

- 66.** Educated, unemployed and rural women are represented by
 (1) A (2) B (3) D (4) E

Sol. (4)

- 67.** Educated unemployed women are represented by
 (1) B ,C (2) D , E (3) E , F (4) G ,E

Sol. (3)

- 68.** How many numbers from 1 to 100 are there which are completely divisible by 4 and also has 4 as digit ?

- (1) 7 (2) 10 (3) 20 (4) 25

Sol. 4, 24, 40, 44, 48, 64, 84

Ans. (1)

- 69.** How many odd numbers are there in the sequence each of which is immediately followed by an odd number ?

5 , 1 , 4 , 7 , 3 , 9 , 8 , 5 , 7 , 2 , 6 , 3 , 1 , 5 , 8 , 6 , 3 , 8 , 5 , 2 , 2 , 4 , 6 , 4 , 9 , 6

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

Sol. 5 1 4 7 3 9 8 5 7 2 6 3 1 5 8 6 3 8 5 2 2 4 6 4 9 6

Ans. (3)

- 70.** An integer is greater than 3 but less than 8. Also it is greater than 6 but less than 10. This number is equal to

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

Sol. (3)

71. A has 18th rank in a class of 49 students. What is his rank from the last ?
 (1) 18 (2) 19 (3) 31 (4) 32

Sol.



$$\text{Total} = \text{Rank From Top} + \text{Rank From bottom} - 1$$

$$49 = 18 + x - 1$$

$$x = 49 - 17 = 32$$

Ans. (4)

72. If it was Saturday on 17th December, 2002, then what was the day on 22nd December, 2004 ?
 (1) Monday (2) Sunday (3) Friday (4) Tuesday

Sol.

17 December 2002 → Saturday

22 December 2004 → ?

17 Dec 2002 → Sat.

17 Dec 2003 → Sunday

17 Dec 2004 → Tuesday

22 Dec 2004 → Sunday

Ans. (2)

73. If number of days are not considered, which two months in a year have same calendar ?
 (1) June , October (2) April , November (3) April , July (4) October , December

Sol.

(3)

74. If 25th August in a year is Thursday, then number of Mondays in that month is
 (1) 3 (2) 4 (3) 5 (4) 6

Sol.

Monday on 2nd, 9th, 16th, 23rd & 30th of August

Ans. (3)

75. If (+) stands for (×), (−) stands for (÷), (×) stands for (−) and (÷) stands for (+), then value of [26 + 72 − 4 × 5 ÷ 2] is

(1) 108

(2) 465

(3) 471

(4) 488

Sol.

$$26 \times 72 \div 4 - 5 + 2$$

$$26 \times 18 - 5 + 2$$

$$468 - 5 + 2$$

$$470 - 5$$

$$465$$

Ans (2)

76. If $A + B > C + D$ and $D + A < B + C$, then
 (1) $D > B$ (2) $C > D$ (3) $A > D$ (4) $B > D$

Sol.

$$A + B > C + D$$

$$B + C > D + A$$

$$\hline A + 2B + C > A + C + 2D$$

$$2B > 2D$$

$$B > D$$

Ans. (4)

77. Arrange the following in a meaningful sequence :
 A = Birth , B = Death , C = Funeral, D = Marriage, E = Education
 (1) AEDBC (2) ADECB (3) AEBDC (4) ADEBC

Sol. Meaning full sequence
 A E D B C
 Ans. (1)

78. Arrange the following in a meaningful sequence :
 A = Study , B = Service , C = Examination, D = Earning, E = Result
 (1) EACDB (2) ABECD (3) ACEBD (4) AECBD

Sol. A C E B D
 Ans. (3)

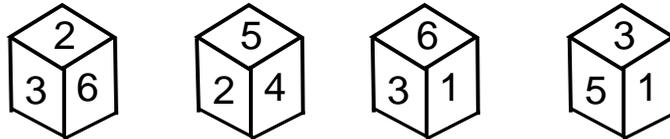
79. A solid cube of white material is painted black on all its surfaces. If it cut into 125 smaller cubes of same size, then how many cubes will have two sides painted black ?
 (1) 32 (2) 36 (3) 42 (4) 40

Sol. Volume of big cube $5 \times 5 \times 5 \text{ cm}^3$
 Volume of small cube $1 \times 1 \times 1 \text{ cm}^3$
 Total number of cubes those have two sides painted black = $12(n - 2) = 12(5 - 2) = 36$
 Ans. (2)

80. A cube painted red on all faces is cut into 27 small cubes of equal size. How many cubes are not painted on any face ?
 (1) 1 (2) 3 (3) 4 (4) 6

Sol. Total number of unpainted cubes
 $= (n - 2)^3$
 $= (3 - 2)^3$
 $= 1$
 Ans. (1)

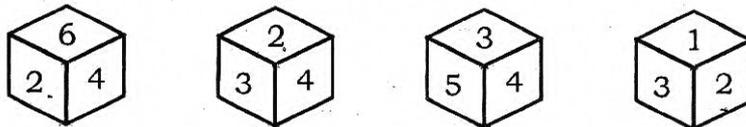
81. The four different positions of a die are given below. Which number is on the face opposite side to 3 ?



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

Sol. By first and second Dice, there is '2' common on one surface , So we can write by '2' in clockwise Direction
 2 - 6 - 3
 2 - 5 - 4
 Ans. (2)

82. The four different positions of the die are given below. Which number is on the face opposite to 2 ?



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

Sol. By first and second figure, '4' is common so we can write
 4-5-3
 4-2-6
 Ans. (3)

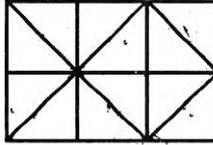
83. How many two-digit numbers can be formed from numbers 2, 5, 6, 8, 7, 1 such that each number has digit 8 always?

- (1) 9 (2) 10 (3) 11 (4) 12

Sol. 18, 28, 58, 68, 78, 81, 82, 85, 86, 87

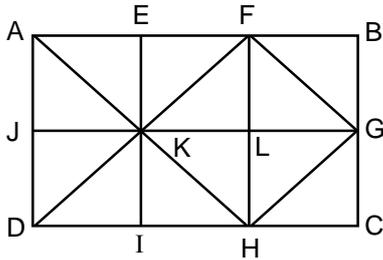
Ans.(2)

84. Determine the number of squares in the following figure :



- (1) 7 (2) 8 (3) 9 (4) 10

Sol.



AEJK, EKFL, FLBG, JKDI, KILH, LHGC, AFMD, EBCI, FKHG

Ans. (3)

85. If '+' stands for 'x', '-' stands for '÷', 'x' stands for '-' and '÷' stands for '+', then value of

$$\frac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1}$$
 is

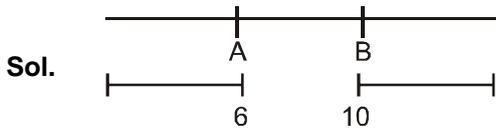
- (1) 8 (2) 12 (3) 0 (4) 4

Sol.
$$\frac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1} = \frac{(36 - 4) \div 8 - 4}{4 + 8 - 2 \times 16 + 1} = \frac{32 \div 8 - 4}{32 - 32 + 1} = \frac{4 - 4}{1} = 0$$

Ans. (3)

86. In a row of students, A is sixth from the left and B is tenth from the right. If there are 8 students between A and B, then total number of students in the row is

- (1) 23 (2) 24 (3) 25 (4) 26



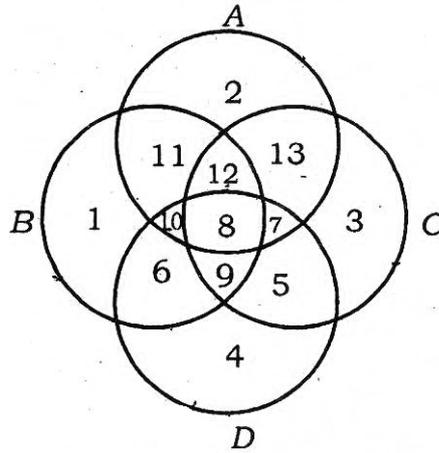
Sol.

Total = 6 + 8 + 10 = 24

Ans. (2)

Questions (87 to 90)

Insturction : Answer Question Nos. 87 to 90 based on the diagram given below :



Circle A represents men having TV, circle B represents men having scooter, circle C represents men having lapt and circle D represents men having car.

87. Men having scooter, TV, laptop but not car are represented by which number ?

- (1) 4 (2) 7 (3) 11 (4) 12

Sol. (4)

88. Men having only car (no other item) are represented by which number ?

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

Sol. Ans. (1)

89. Men having neither scooter nor car are represented by which number?

- (1) 13 only (2) 2 only (3) 3 only (4) 2, 13, 3

Sol. Ans. (4)

90. Men having car and laptop only are represented by which number ?

- (1) 9 (2) 8 (3) 7 (4) 5

Sol. Ans. (4)

91. As 'circle' is related to its 'circumference', in the same way, 'square' is related to which of the following ?

- (1) Volume (2) Area (3) Diagonal (4) Perimeter

Sol. As circle is related to its circumference in same way square is related to perimeter.

Ans. (4)

92. As 'walking' is related to 'running', in the same way, 'smiling' is related to which of the following ?

- (1) feeling (2) weeping (3) laughing (4) watching

Sol. Ans. (3)

93. As 'college' is related to its 'student' in the same way, 'hospital' is related to which of the following ?

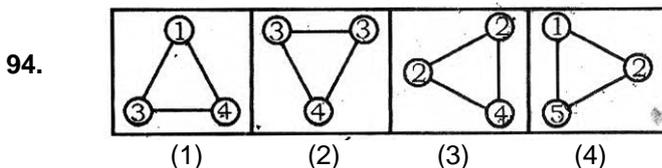
- (1) Doctor (2) Patient (2) Nurse (4) Treatment.

Sol. In 'college' students are admit in same way 'hospital' related to patient.

Ans. (2)

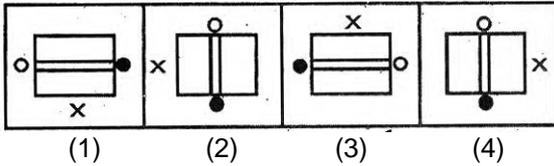
Questions (94 to 96)

Instruction : In Question Nos. 94 to 96, there are four figures given in each. One of these figures does not correlate with the rest of the figures. Select that odd figure.



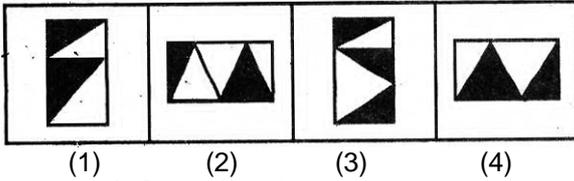
Sol. Sum of digits in figures (1), (3) & (4) is 8 but in figures (2) is 13.
Ans. (2)

95.



Sol. In figure (1) (2) & (3) in anticlock wise direction o, x, • are present but in figure (4) they come in clockwise
Ans. (4)

96.



Sol. In option 1, 3 and 4, half part is painted and rest half part is unpainted.
Ans. (2)

Questions (97 to 100)

Instruction : In Question Nos. 97 to 100, there alternatives are alike in a certain way but the rest one is different. Select the odd one.

97. (1) Radish (2) Carrot (3) Pea (4) Turnip

Sol. (3)

98. (1) 105 (2) 91 (3) 65 (4) 117

Sol. Option (2) (3) & (4) are divisible by 13 but option (1) is not
Ans. (1)

99. (1) OVO (2) CUU (3) TTA (4) AFA

Sol. Repeating alphabets are vowel.
Ans. (3)

100. (1) Football (2) Carrom (3) Hockey (4) Cricket

Sol. Rest of all are outdoor games.
Ans. (2)