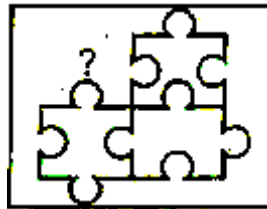


**NTSE STAGE – I (2018 – 19) HARYANA STATE
(For Class – X)
SET : C
MENTAL ABILITY TEST (MAT)**

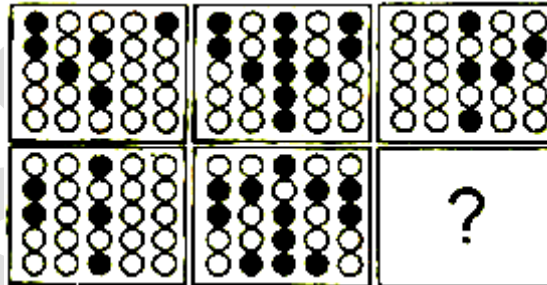
1. In the question below select a figure from amongst the four alternatives, which when placed in the (?) of figure (X) would complete the pattern.
Identify the figure that completes the pattern:



(X)

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

2. Which option replaces the question mark (?) in the figure given below?



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

3. The following questions are based on letters series in which some letters are missing. The missing letters are given in a proper sequence as one of the alternatives among the given four alternatives under the question
b__abbc__bbca__bcabb__ab

- (1) acaa (2) acba
(3) cabc (4) cacc

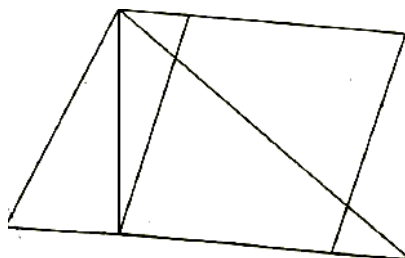
4. At what time between 7 and 8 O' clock will the hand of a clock be in the same straight line but, not together?

- (1) 5 min past 7 (2) $5 \frac{2}{11}$ min past 7

(3) $5\frac{3}{11}$ min past 7

(4) $5\frac{5}{11}$ min past 7

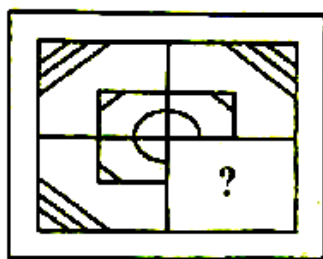
5. How many quadrilaterals are there in the given figure?



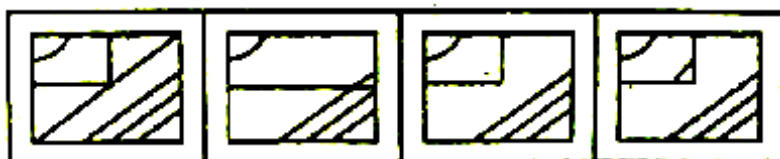
- (1) 10
(3) 12

- (2) 11
(4) 13

6. Select the figure from the given four alternatives, which places in the (?)
Problem Figure



Answer Figure



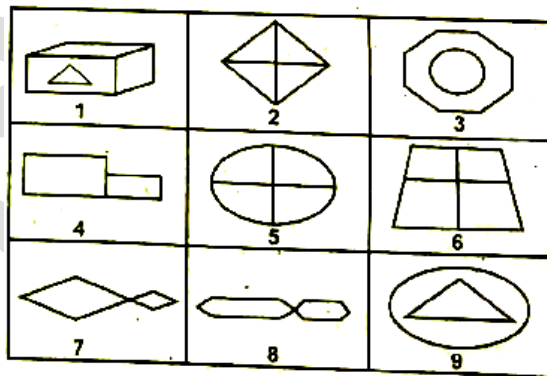
- (1) (2) (3) (4)

7. If B5D means B is the father of D.
B9D means B is the sister of D.
B4D means B is the brother of D.
B3D means B is the wife of D.
Which of the following means F is the mother of K.
(1) F3M5K (2) F5M3K
(3) F9M4N3K (4) F3M5N3K
8. Statement: Some keys are staplers. Some staplers are stickers. All the stickers are pens.
Conclusions:
I. Some pens are staplers.
II. Some stickers are keys.
III. No sticker is key.
IV. Some staplers are keys.
(1) Only I and II (2) Only II and IV
(3) Only II and III (4) Only I and IV and either II or III
9. In the question given below, find out the alternative which will replace the question mark?
 $123 : 13^2 :: 235 : ?$
(1) 23^2 (2) 35^2
(3) 25^3 (4) 25^2

Directions (Q. No 10 to 13):

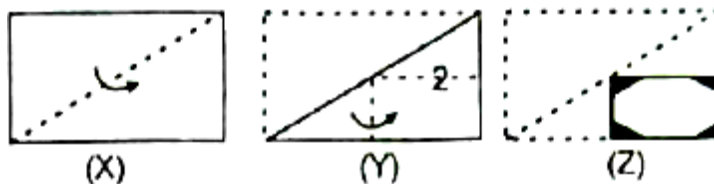
There are eight persons namely A, B, C, D, E, F, G and H lives on eight different floor from one to eight. Ground floor is number 1 and top floor is number eight but persons do not necessarily live in the same order. Only three persons live below the floor on which E lives. Two persons live between the floor on which E and H live. More than one person live between the floor on which E and A lives. C lives immediately above G. C lives on odd numbered floor. Only one person lives between B and F. B lives one of the above floor on which F lives. D lives on even numbered floor but not on 2nd floor.

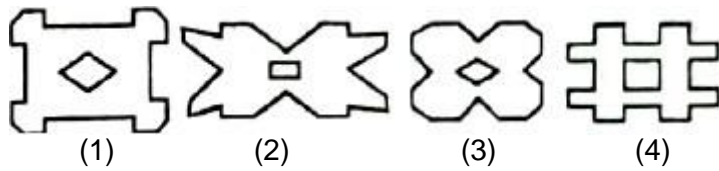
10. Who lives on floor number eight?
 (1) B (2) C
 (3) A (4) D
11. How many persons live between F and A?
 (1) One (2) Three
 (3) Five (4) Two
12. Who lives immediate below G?
 (1) B (2) H
 (3) A (4) E
13. Who lives on third floor?
 (1) C (2) F
 (3) E (4) D
14. How many numbers from 1 to 50 are there each of which is not only exactly divisible by 4 but also contain 4 as a digit in it?
 (1) 5 (2) 4
 (3) 7 (4) 8
15. Group the given 9 figures into three classes using each figure only once.



- (1) 1, 3, 9; 2, 5, 6; 4, 7, 8
- (2) 1, 3, 9; 2, 7, 8; 4, 5, 6
- (3) 1, 2, 4; 3, 5, 7; 6, 8, 9
- (4) 1, 3, 6; 2, 4, 8; 5, 7, 9

16. Choose a figure which would most closely resemble the unfolded form of Figure (Z).

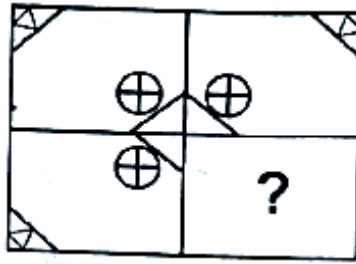




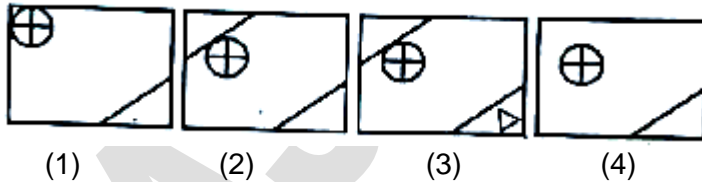
17. If Z = 52 and ACT = 48 and BAT will be equal to
 (1) 39 (2) 41
 (3) 44 (4) 46
18. Arrange the following words per order in the dictionary.
 (1) Tortoise (2) Torrid
 (3) Torso (4) Torque
 (5) Tortuous
 Options
 (1) 4, 2, 3, 1, 5 (2) 3, 2, 4, 1, 5
 (3) 2, 3, 4, 5, 1 (4) 4, 3, 2, 1, 5

19. Select the figure from the given four alternatives, which placed the (?) which complete the pattern:

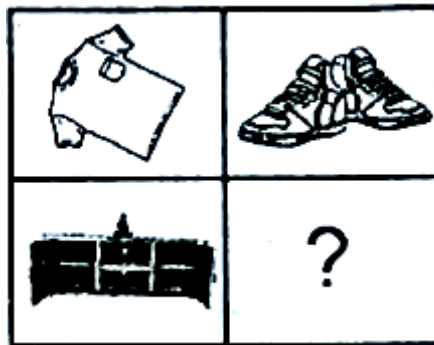
Question Figure



Answer Figure



20. Pick the off one out among the following options:
 (1) Quiet – Calm (2) Seldom – Never
 (3) Peace – Tranquil (4) Rapid – Slow
21. Choose the picture that would go in the empty box so that the two bottom pictures are related in the same way as the top two are related.





(1)



(2)



(3)



(4)

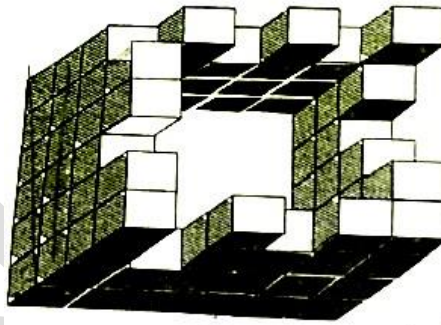
(Q. 22 – 23): In a quiz competition out of 880 participants 224 choose mathematics 240 choose science and 336 choose sports, 64 choose both sports and science, 80 choose mathematics and sports, 40 choose mathematics and science and 24 choose all the three subjects.

22. The percentage of participants who did not choose any subject is:
- (1) 23.59 (2) 30.25
 (3) 37.46 (4) 27.27

23. Of those participating, the percentage, who choose only one subject is:
- (1) 60 (2) More than 60
 (3) Less than 60 (4) More than 75

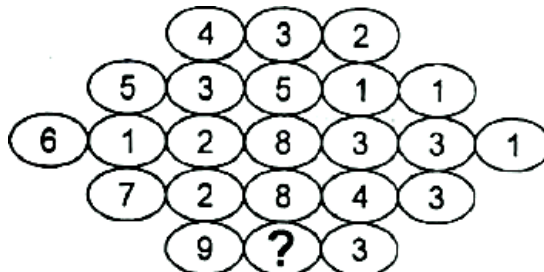
24. A clock is set right at 5 AM. The clock loses 16 minutes in 24 hours. What will be the exact time, when the clock indicates 10 PM on fourth day?
- (1) 11 PM (2) 12 PM
 (3) 1 PM (4) 2 PM

25. Count the number of cubes in the following figure:



- (1) 68 (2) 69
 (3) 70 (4) 71

26. By using your numerical and logical reasoning skills please try to find out which number is missing the question below. The numbers around will give you the clues you need to solve the puzzle.



- (1) 9 (2) 4
 (3) 5 (4) 6

27. Choose the alternative which is closely resembles the mirror image of the given combination:

QUALITY

(1) QILAVNU

(2) QUILATY

(3) QUILATY

(4) QUILATY

28. Arrange the words given below in a meaningful sequence :

1. Probation

2. Interview

3. Selection

4. Appointment

5. Advertisement

6. Application

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

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

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

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

29. In the question below, two words are given. These words are related to each other in some way. You are required to find out the relationship between the first 2 words and choose the word from the given alternative, which bears the same relationship to the third word.

Malaria: Disease: : Spear: ?

(1) Wound

(2) Sword

(3) Weapon

(4) War

30. Below you are served with four different type of Venn diagrams that indicate a definite relationship between Tennis, Rugby and Soccer. You need to find out the diagram which is the most relevant.



31. If M%N means M is the son of N

M@N means M is the sister of N

M\$N means M is the father of N.

Then which of the following shows the relation that C is the granddaughter of E?

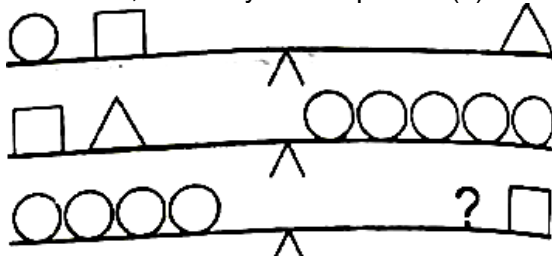
(1) C % B \$ F \$ E

(2) B \$ F \$ E % C

(3) C @ B % F % E

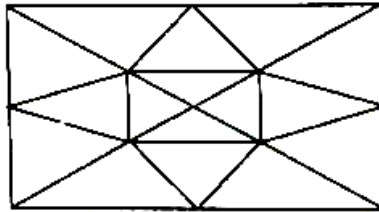
(4) E % B \$ F \$ C

32. Figure below represents a balance, which symbol replaces (?)



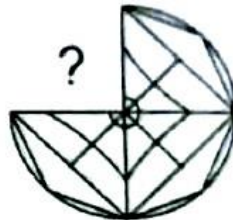
- (1)
- (2)
- (3)
- (4)

33. Find the number of triangles in the below figure?



- (1) 20
- (2) 22
- (3) 16
- (4) 28

34. Choose the correct option which would complete the figure (X).

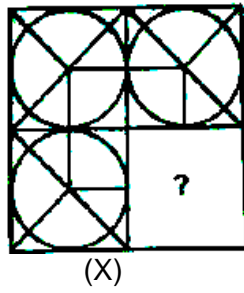


- (1)
- (2)
- (3)
- (4)

35. Choose the alternative which closely resembles the water – image of the given combination:
DISC

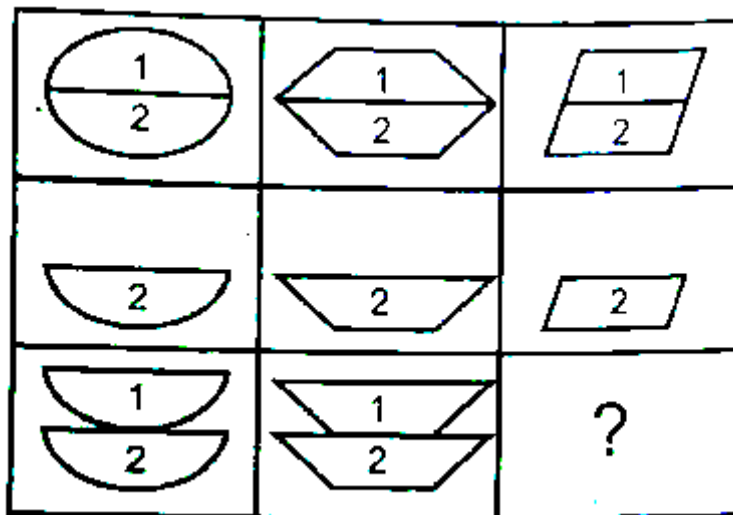
- (1) CSID
- (2) ɹ21ɹ
- (3) DI2C
- (4) DISC

36. Select the figure from the given four alternatives, which placed in the (?)

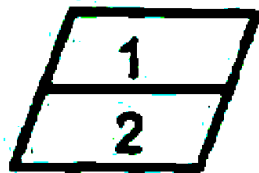


- (1) (2) (3) (4)

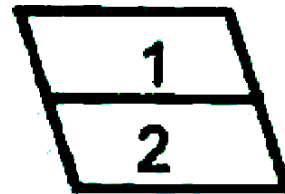
37. Select a suitable figure from the four alternatives that would complete the figure matrix.



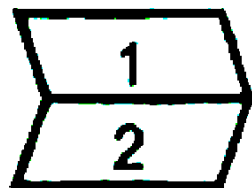
(1)



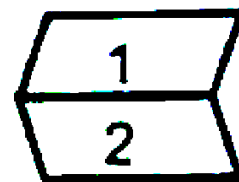
(2)



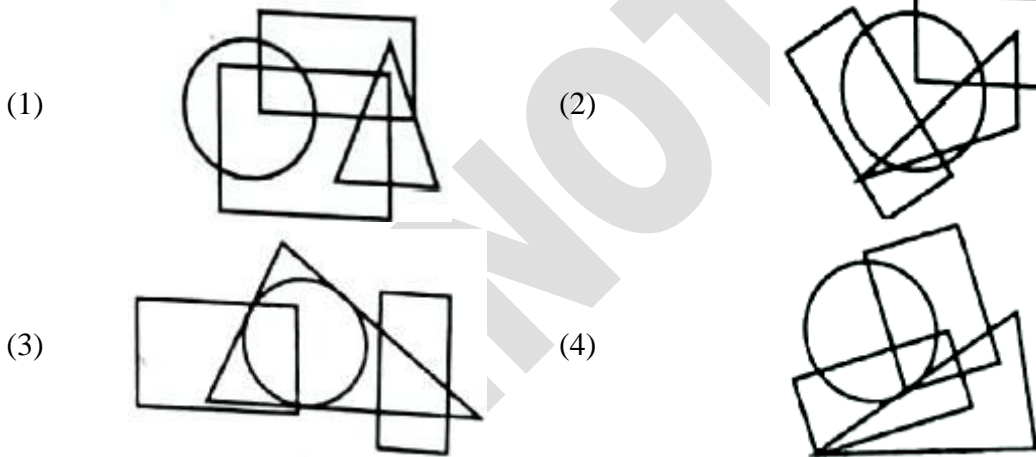
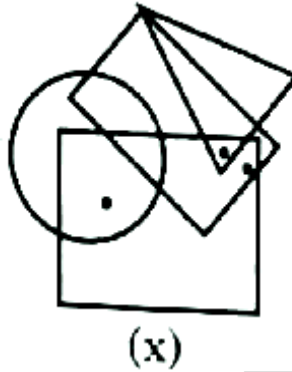
(3)



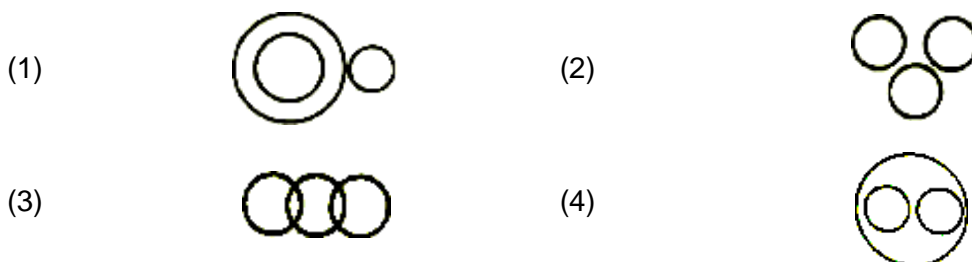
(4)



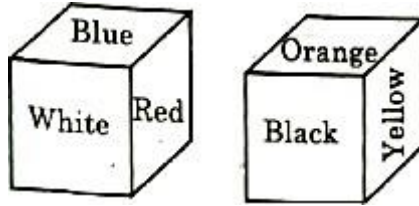
38. Ten years ago, the age of mother was three times the age of her son. After ten years, mother's age will be twice that of his son. Find the ratio of their present ages.
 (1) 11:7 (2) 9 : 5
 (3) 7 : 4 (4) 7 : 3
39. The given figure (x) has dots that fulfil same conditions. Find out a figure from the alternatives where if dots are placed they will fulfil the same conditions.



40. In a school 80 students have registered for a singles carom tournament. Each match eliminates one player. How many matches are to be organized to determine the champion?
 (1) 40 (2) 41
 (3) 79 (4) 80
41. A monkey climbs 10 meters at the beginning of each hour and rest for a while when he slips back 5 metres before he again starts climbing in the beginning next. Hour. If he starts climbing at 8 a.m. at what time will he first touch the flag at 50 metres from the ground?
 (1) 4 p.m. (2) 5 p.m.
 (3) 6 p.m. (4) 7 p. m.
42. Which of the following Venn diagrams indicates the best relation between Travellers, Train and Bus?

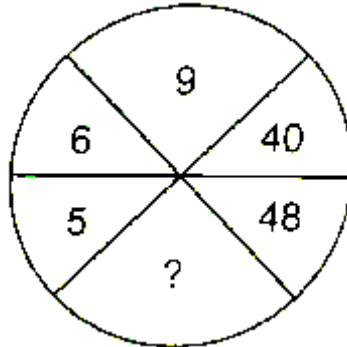


43. Six sides of a cube are coloured in the following manner:

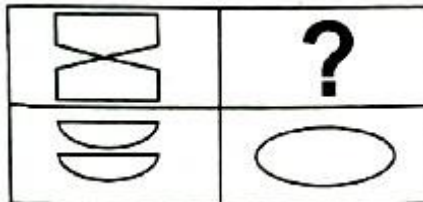


Blue and Orange are opposite and Red is on the top which colour will be at the bottom?

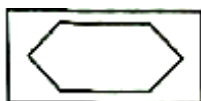
- (1) Black (2) White
 (3) Orange (4) Yellow
44. The numbers have been arranged under some rule. Based on the rule, which number will come in place of the question mark?
 4, 5, 8, 17, 44?
- (1) 102 (2) 104
 (3) 125 (4) 110
45. Direction : In the following question insert the missing number in place of question mark from the given alternatives.



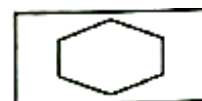
- (1) 54 (2) 70
 (3) 72 (4) 80
46. If 'x' stands for 'addition', '<' stands for 'subtraction', '+' stands 'division', '>' stands for 'multiplication' '-' stands for 'equal to', '÷' stands for 'greater than' and '=' stands for 'less than', state which of the following is true?
- (1) $3 \times 2 < 4 \div 16 > 2 + 4$ (2) $5 > 2 + 2 = 10 < 4 \times 8$
 (3) $3 \times 4 > 2 - 9 + 3 < 3$ (4) $5 \times 3 < 7 \div 8 + 4 \times 1$
47. Select a suitable figure from the four alternatives that would complete the figure matrix?



(1)



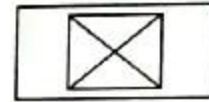
(2)



(3)



(4)



48. Which number will come next in the given series?

36, 34, 30, 28, 24?

(1) 20

(2) 22

(3) 23

(4) 26

49. Seema started early in the morning on the road towards the Sun. After some time she turned to her left. Again after some time she turned to her right. After moving some distance she again turned to her right and began to move. At this time, in what direction was she moving?

(1) South

(2) North – West

(3) North – East

(4) East

50. Which of the following is the mirror image of the figure (x) given?



(x)

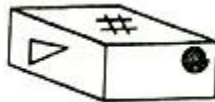
(1)



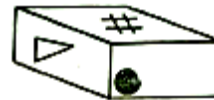
(2)



(3)



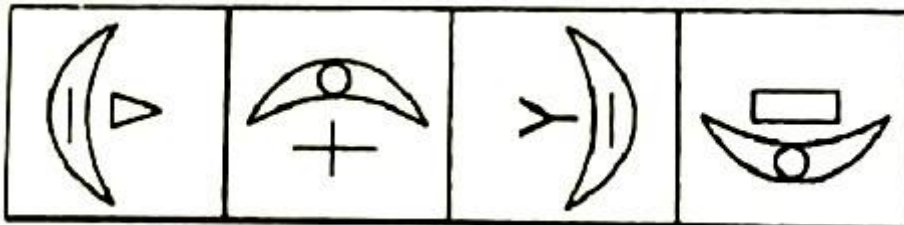
(4)



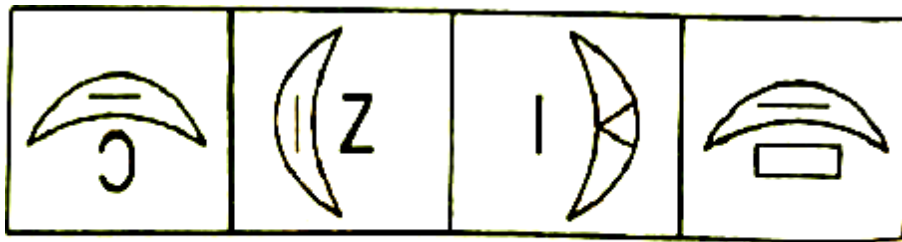
Direction: (Q. No. 51 & 52)

Which one of the answer figure would occupy the next position in the problem figure, if the change continue in same order.

51. **Question Figures:**



Answer Figures:



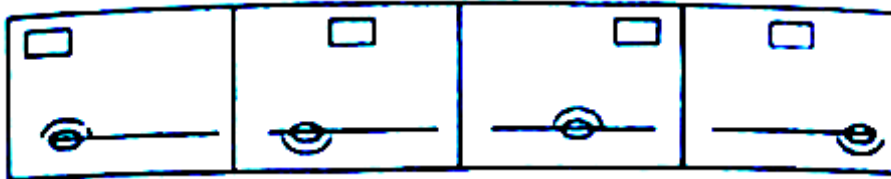
(1)

(2)

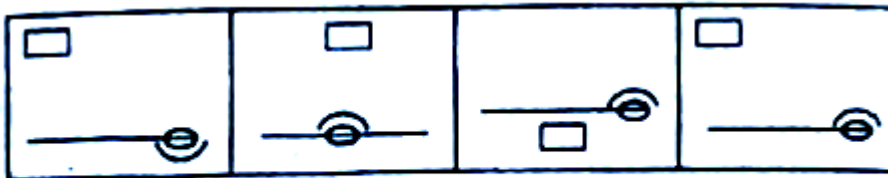
(3)

(4)

52. Question Figures:



Answer Figures:



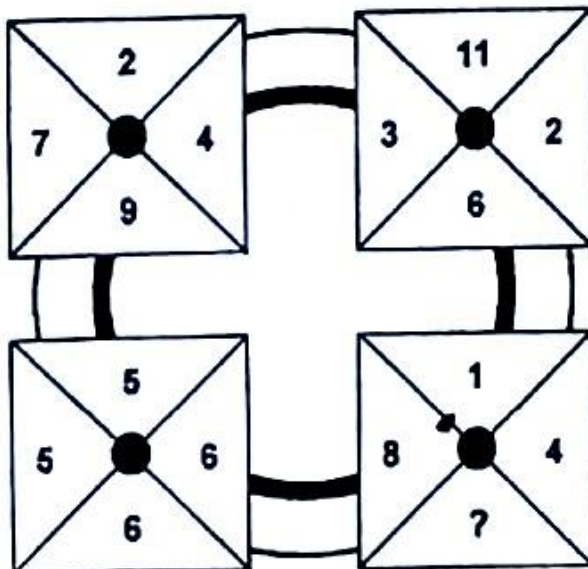
(1)

(2)

(3)

(4)

53. Which number replaces the question mark?



(1) 9

(2) 11

(3) 12

(4) 13

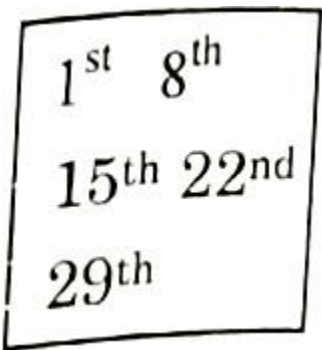
54. There are two statements given below as premises, which support the conclusion suggested in the answer options. You may select the conclusion that makes the whole argument valid.
Statements:

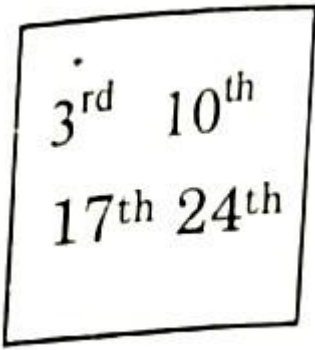
- (I) no film actors are cricketers
 (II) Some cricketers are poets.

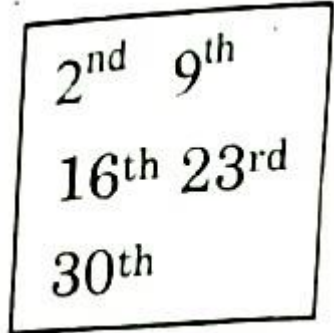
Therefore:

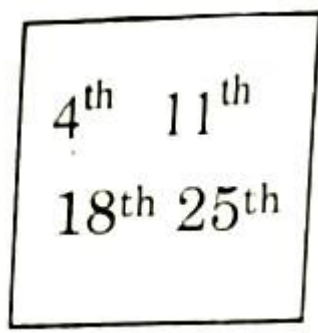
- (1) Some poets are film actors
 (2) Some poets are not film actors
 (3) All poets are film actors
 (4) All film actors are poets

55. On what dates of April, 2001 did Wednesday fall?

(1) 

(2) 

(3) 

(4) 

56. The reflex angle between the hands of a clock at 10:25 is—

- (1) 180°
 (2) $192\frac{1}{2}$
 (3) 195°
 (4) $197\frac{1}{2}$

57. Choose the pair that best represents a similar relationship to the expressed in the original pair or words—

MONK : DEVOTION

- (1) Maniac : Pacifism
 (2) Explorer : Contentment
 (3) Visionary : Complacency
 (4) Rover : Wanderlust

58. In a family of eight people, lawyer is married to a teacher and has three sons, an engineer, one doctor and one actor. The actor's wife is dancer and aunt of Emily. Emily, the daughter of engineer learns martial arts with her brother Joseph. How is doctor related to Joseph?

- (1) Son
 (2) Brother
 (3) Nephew
 (4) Uncle

59. Which number replace the question mark in the figure given below?

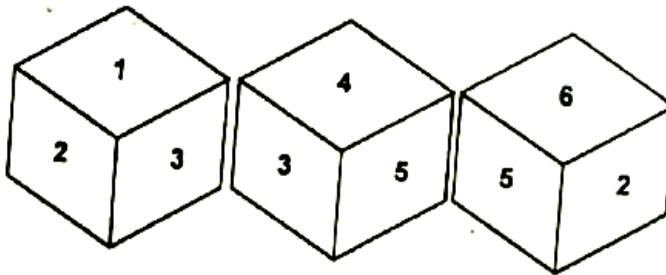
| | | |
|---|-----|---|
| 3 | GNQ | 8 |
|---|-----|---|

| | | |
|---|-----|---|
| 3 | RBS | 9 |
| 4 | TUA | 2 |
| 2 | FPC | 5 |
| 3 | OLH | ? |

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

60. If 'nso ptr kli chn' stands for 'sharma get marriage gift'; 'ptr lnm wop chm' stands for 'wife gives marriage gift'; 'tti wop nhi' stands for 'he gives nothing' what would means 'gives'?
- (1) chn
(3) ptr
- (2) nhi
(4) wop

61. A dice with six faces is marked with six numbers 1, 2, 3, 4, 5 and 6 respectively. This dice is rolled three times and three positions are shown as –



Find the number opposite to 1.

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

62. In the question below is given two or more statements followed by two conclusions numbered I and II. 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 conclusion and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements:

No giraffe is a leopard.
All leopards are kangaroos.
All kangaroos are wolfs.

Conclusions:

- (I) All kangaroos can never be giraffes.
(II) All giraffes are definitely wolfs.

Give Answers

- (1) If only conclusion I follows
(2) If only conclusion II follows
(3) If either conclusion I or conclusion II follows
(4) If both conclusion I and II follows

63. **Direction:** Study the following information and answer the question given below it.
There is a group of five persons K, G, H, R and J.
(i) K, G and H are intelligent.
(ii) K, R and J are hard-working.
(iii) R, H and J are honest.
(iv) K, G and J are ambitious.

Which of the following person is neither hard-working nor ambitious?

- (1) K
(2) G

(3) H

(4) R

Direction: (Q. No. 64 & 65)

Choose the correct alternative that will continue the same pattern and replace the question mark in the given series:

64. 0, 2, 3, 5, 8, 10, 15, 17, 24, 26, ?

- (1) 28
(3) 32

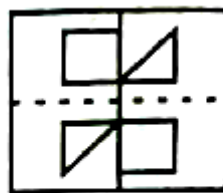
- (2) 30
(4) 35

65. 2, 2, 5, 13, 28, ?

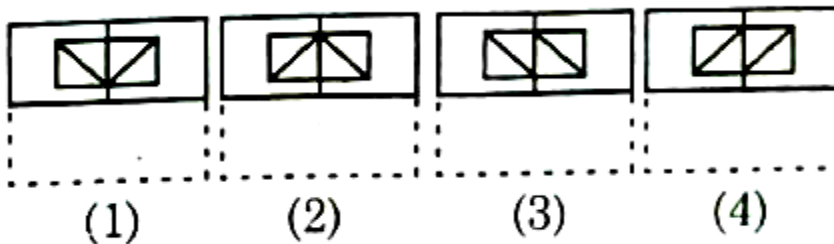
- (1) 49
(3) 51

- (2) 50
(4) 52

66. Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



(X)



67. If the position of the first and sixth letters of the word 'UNIFORMITY' are interchanged, similarly the position of 2nd with 7th letter, 3rd with 8th letter, 4th with 9th and 5th with 10th letter are interchanged. Which letter will be 4th from the right end after arrangement?

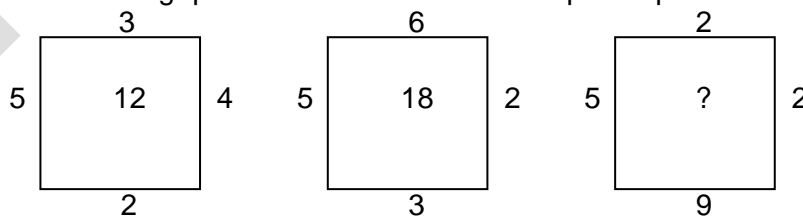
- (1) I
(3) M

- (2) U
(4) N

Direction: (Q. No. 68 & 69)

In the following question which number will replace question mark?

68.



- (1) 15
(3) 17

- (2) 18
(4) 16

69.

| | | |
|---|----|----|
| 6 | 18 | 15 |
| 3 | 2 | 5 |
| 4 | 3 | ? |
| 8 | 27 | 9 |

- | | |
|-------|--------|
| (1) 2 | (2) 11 |
| (3) 3 | (4) 6 |

70. A word given in capital letters is followed by four answer words. Out of these only one cannot be formed by using the given words. Find out this word?

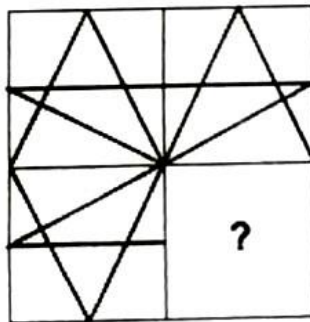
NECESSARY

- | | |
|----------|-----------|
| (1) NICE | (2) ESSAY |
| (3) EASY | (4) RACE |

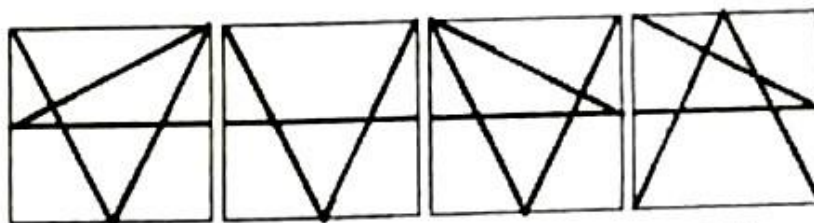
71. In an examination, a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts all 75 question and secures 125 marks, the number of question he attempted correctly, is –

- | | |
|--------|--------|
| (1) 35 | (2) 40 |
| (3) 42 | (4) 46 |

72. Identify the figure that completes the pattern (x) –



(x)



(1)

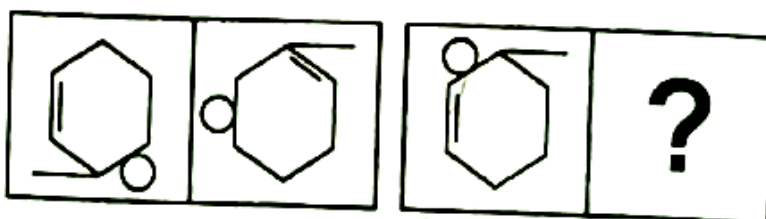
(2)

(3)

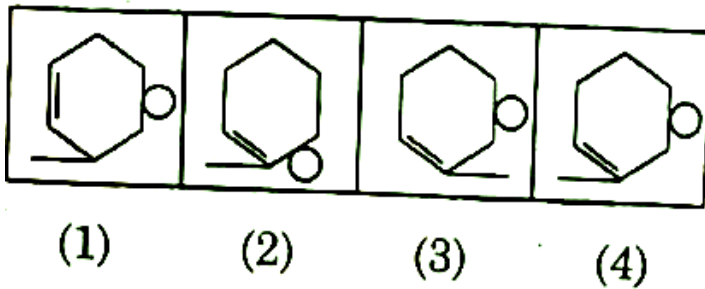
(4)

73. The first unit contains two figures and the second unit contains one figure and a question mark. Find out which one of the answer figure should be placed at question mark?

Problem Figures:



Answer Figures:

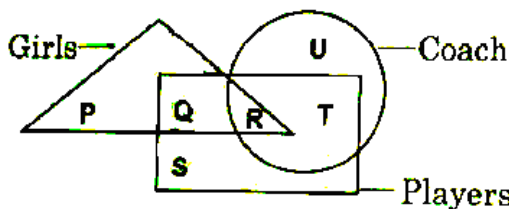


74. First bunch of bananas has $(1/4)$ again as many bananas as second bunch. If the second bunch has three bananas less than the first bunch, then the number of bananas in the first bunch are –
 (1) 9 (2) 10
 (3) 12 (4) 15
75. Look at this series: 664, 332, 340, 170, ?, 89, What number should be placed at (?) –
 (1) 85 (2) 97
 (3) 109 (4) 178

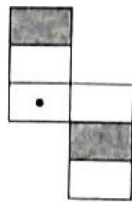
76. In the given table numbers are written according to some pattern and one number is missing. Find the missing number that replaces the question mark.

| | | |
|----|----|----|
| 12 | 47 | 21 |
| 10 | 52 | 4 |
| 64 | ? | 24 |

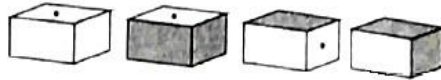
- (1) 16 (2) 40
 (3) 62 (4) 83
77. In the following series of numbers, find out how many times 1, 3 and 7 appeared together. 7, being in the middle and 1 and 3 on either side of 7.
 2 9 7 3 1 7 3 7 7 1 3 3 1 7 3 8 5 7 1 3 7 7 1 7 3 9 0 6
 (1) 3 (2) 4
 (3) 5 (4) more than 5
78. In the following figure triangle represents 'girls'. Rectangle 'players' and circle 'coach'. Which part of the diagram represents the girls who are player but not coach



- (1) P (2) Q
 (3) R (4) S
79. The figure(X) is folded to form a box. Choose from the alternative (i), (ii), (iii) & (iv) the boxes that is similar to the box formed.



(x)



(i)

(ii)

(iii)

(iv)

- (1) (ii) and (iii) only
 (3) (ii) and (iv) only

- (2) (i), (iii) and (iv) only
 (4) (i) and (iv) only

80. Find the odd one out
 331, 482, 551, 263, 383, 362, 284

- (1) 263
 (3) 331

- (2) 383
 (4) 561

81. The words in the bottom row are related in the same way as the words in the top row. For each item, find the word that completes the bottom row of words;

| | | |
|---------|----------|-----|
| ant | fly | bee |
| hamster | squirrel | ? |

- (1) Spider
 (3) Rodent

- (2) Mouse
 (4) Cat

82. If South-East becomes North and North-East becomes West, then West becomes

- (1) North-East
 (3) North-West

- (2) South-East
 (4) South-West

83. In the question below an equation becomes incorrect due to the interchange of two signs. One of the four alternatives under it specifies the interchange of signs in the equation, which when made will make the equation correct.

Find the correct alternative

$$5 + 6 \div 3 - 12 \times 2 = 17$$

- (1) \div and \times
 (3) $+$ and \div

- (2) $+$ and \times
 (4) $+$ and $-$

84. In a certain code BOXER is written as AQWGG. How visit is written in that code?

- (1) UKRKU
 (3) WKRKU

- (2) UKRKS
 (4) WKRKS

85. How many days are there in x week and x days

- (1) $7x^2$
 (3) $14x$

- (2) $8x$
 (4) 7

86. If diamond is called gold, gold is called silver, silver is called ruby and ruby is called emerald, which is the cheapest jewel.

- (1) Diamond
 (3) Gold

- (2) Silver
 (4) Ruby

87. In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?

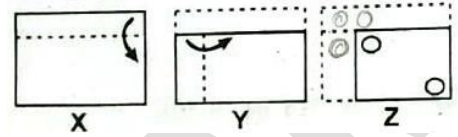
- (1) 318826
 (3) 618826

- (2) 318286
 (4) 338816

93. How many persons can speak English, Hindi and Telugu?
 (1) 8 (2) 2
 (3) 7 (4) 10

94. How many persons can speak all the languages?
 (1) 1 (2) 8
 (3) 2 (4) None

95. In this question there is a set of three figures X, Y and Z showing a sequence of folding of a piece of paper. Figure (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of fig. (Z)



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

96. If: $3 + 9 = 31$
 $15 + 27 = 95$
 $18 + 9 = 36$
 Then, $12 + 27 = ?$
 (1) 94 (2) 14
 (3) 49 (4) 53

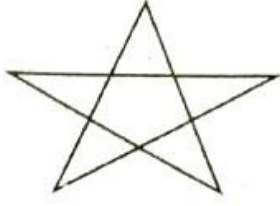
Direction: (Q. No. 97 to 99)

Seven villages A, B, C, D, E, F and G are situated as follows:

E is 2 km to the west of B. F is 2 km to the north of A. D is 2 km to the south of G. C is 1 km to the west of A. G is 2 km to the east of C. D is exactly in the middle of B and E.

97. How far is E and F (in km)?
 (1) 5 km (2) 6 km
 (3) 4 km (4) 4.5 km
98. Which two village are the farthest from one another?
 (1) D and C (2) F and E
 (3) F and B (4) G and E
99. A is in the middle of two villages:
 (1) C and F (2) B and D
 (3) C and G (4) C and B

100. How many triangles are there in the following figure?



- (1) 10
- (3) 8

- (2) 6
- (4) 5

PRAASHNOTTAR

NTSE STAGE – I (2018 – 19) HARYANA STATE
(For Class – X)
SET : C
SCHOLASTIC APTITUDE TEST (SAT)

1. Difference between systolic and diastolic blood pressure is known as –
(1) blood pressure (2) cardiac output
(3) pulse pressure (4) heart beat
 2. About what percentage of living species are in danger of extinction?
(1) 20% (2) 10%
(3) 30% (4) 1%
 3. Entry of water into root hairs is an example of –
(1) Diffusion (2) Imbibition
(3) Osmosis (4) Plasmolysis
 4. Tendons & ligaments are types of tissue
(1) muscular tissue (2) epithelial tissue
(3) nervous tissue (4) fibrous tissue
 5. The organ which spider use to prepare web is –
(1) Spinnerates (2) Spicules
(3) Spiracles (4) Carapace
 6. Variations are important as they produce:–
(1) Adaptations (2) Elimination
(3) Evolution (4) Selection
 7. Mode of nutrition in cuscuta is –
(1) Saprophytic (2) Autotrophic
(3) Parasitic (4) Insectivorous
 8. Structural and functional unit of kidney is –
(1) Nephron (2) Ureter
(3) Neuron (4) Urethra
 9. Lateral ventricles are found in –
(1) Cerebellum (2) Cerebral hemisphere
(3) Diencephalon (4) Medulla oblongata
 10. Cessation of menstrual cycle is called –
(1) Puberty (2) Menarche
(3) Pregnancy (4) Menopause
 11. Exchange of gases in human occurs in –
(1) Trachea (2) Pleura
(3) Bronchi (4) Alveoli
 12. Which of the following disease is only due to external causes?
(1) Diabetes (2) Arthritis
(3) Jaundice (4) Cataract
-

13. High yielding varieties of what were initially developed by an Indian scientist by cross breeding the traditional varieties with –
 (1) Mexican varieties (2) European varieties
 (3) American varieties (4) African varieties
14. ILS–82 and B–77 breeds are of following –
 (1) Cow (2) Fowl
 (3) Pig (4) Buffalo
15. 25 g of water contain
 (1) 12×10^{23} atom of Hydrogen and 6×10^{23} atom of oxygen
 (2) 5×10^{24} atoms of Hydrogen and 2.5×10^{24} atoms of oxygen
 (3) 2.72×10^{23} atom of Hydrogen and 8.372×10^{23} atoms of oxygen
 (4) 16.722×10^{23} atoms of Hydrogen and 8.362×10^{23} atoms of oxygen
16. Which of the following contain five molecule of water of crystallization?
 (1) Blue Vitriol (2) White Vitriol
 (3) Epsom Salt (4) Green Vitriol
17. Digestive fluids in stomach has approximate pH of
 (1) 0 (2) 2
 (3) 4 (4) 6
18. When water gas mixed with half its volume of hydrogen and the mixture is compressed to 300 atm pressure and passed over ZnO. Cr_2O_3 catalyst a colourless liquid is obtained which is used as solvent for paints and Varnishes. The liquid will be
 (1) Methanol (2) Ethanol
 (3) Ether (4) Acetone
19. Which of the following arrangement represent increasing oxidation number of central atom (Mn, Cr, Cl)?
 (1) MnO_4^- , CrO_4^{2-} , ClO_3^- , CrO_2^- (2) ClO_3^- , CrO_4^{2-} , MnO_4^- , CrO_2^-
 (3) CrO_2^- , ClO_3^- , CrO_4^{2-} , MnO_4^- (4) CrO_4^{2-} , MnO_4^- , CrO_2^- , ClO_3^-
20. Which of the following is an oxide ore?
 (1) Calcite (2) Zincite
 (3) Magnesite (4) Calamine
21. Which of the following statements are incorrect regarding Mandleepv's periodic table?
 (a) Mandleepv considered compounds formed by element with oxygen and hydrogen.
 (b) In the table Ni is placed before Co.
 (c) Eka-silicon in Mandleepv's periodic table is gallium.
 (d) The properties of elements are the periodic function of their atomic masses.
 (1) Only (b) (2) Only (c)
 (3) Both (b) & (c) (4) Both (a) & (d)

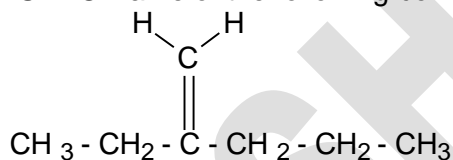
22. Consider the two statements below one labeled as Assertion (A) and other as Reason (R). Examine these two statements carefully and decide if Assertion (A) and Reason (R) individually true and if so (R) is a correct explanation of (A) select your answer using the code below:

Assertion (A): Magnesium imparts characteristic colour to the flame.

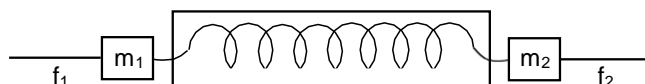
Reason (R): Due to small size and high effective nuclear charge ionization enthalpy of magnesium is high.

- (1) Both A & R are true and R is a correct explanation of A.
 (2) Both A & R are true but R is not correct explanation of A.
 (3) A is true R is false.
 (4) A is false R is true.
23. Incorrect statement in regard to halogens is
 $HI > HBr > HCl > HF$
 (1) Chlorine has the highest electron affinity in the group.
 (2) Ionization energies of halogen are very low.
 (3) Except fluorine they show an oxidation state of -1 or $+1$.
 (4) Acidic strength of hydrogen halides decrease in the order
24. Reaction with sodium hydrogen carbonate can be used to distinguish between
 (1) Ethanoic acid & Methanoic acid (2) Ethanol and Methanol
 (3) Ethanol and Ethanoic acid (4) Ethylacetate and Ethanol
25. Rekha dropped a metal piece A in the solution of another metal B. After some time a new colourless compound C is formed. A,B,C respectively can be
 (1) Cu, $ZnSO_4$, $CuSO_4$ (2) Mg, NaCl, $MgCl_2$
 (3) Mg, $CuSO_4$, $MgSO_4$ (4) Fe, $ZnSO_4$, $FeSO_4$

26. IUPAC Name of the following compound will be:



- (1) 3-Methylene hexane (2) 2-Propyle-1-butene
 (3) 4-Ethyl-4-pentene (4) 2-Ethyl-1-pentene
27. In balanced chemical equation
 $a \text{ Cu} + b \text{ HNO}_3(\text{dil}) \longrightarrow c \text{ Cu}(\text{NO}_3)_2 + d \text{ H}_2\text{O} + e \text{ NO}$
 Which of the following alternative are correct?
 (1) $a = 1, b = 4, c = 1, d = 2, e = 2$ (2) $a = 3, b = 4, c = 3, d = 1, e = 1$
 (3) $a = 1, b = 4, c = 1, d = 4, e = 2$ (4) $a = 3, b = 8, c = 3, d = 4, e = 2$
28. A dynamometer D is attached to two masses $m_1 = 3\text{ kg}$ and $m_2 = 5\text{ kg}$. Forces of $f_1 = 9\text{ N}$ & $f_2 = 25\text{ N}$ are applied to the masses as shown:
 The dynamometer will read



- (1) 10 N (2) 15 N
 (3) 14 N (4) 6 N
29. A packet of weight W was allowed to fall freely in a water tank with acceleration 'a' ($<g$). The magnitude of resistive force offered by water is

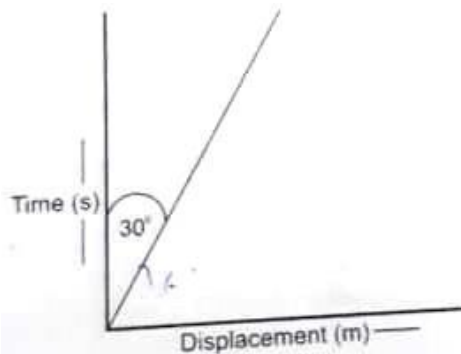
$$(1) \omega \begin{pmatrix} g \\ a \end{pmatrix}$$

$$(2) \omega \begin{pmatrix} a \\ g \end{pmatrix}$$

$$(3) \omega \begin{pmatrix} 1-a \\ g \end{pmatrix}$$

$$(4) \omega \begin{pmatrix} 1+g \\ \bar{a} \end{pmatrix}$$

30. The displacement time graph of a body in motion is given as below:



Velocity of body is (in m/s)

$$(1) 3$$

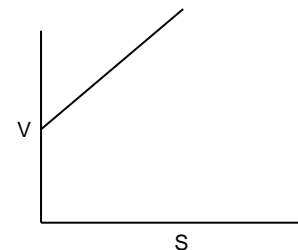
$$(2) 1/3$$

$$(3) \sqrt{3}$$

$$(4) \frac{1}{\sqrt{3}}$$

31. V^2 - S graph of moving body in straight line is as shown in figure. Which one among the following is not true?

- (1) Motion is uniformly accelerated.
(2) Corresponding s - t graph will be parabola.
(3) Initial velocity of particle is zero.
(4) Velocity is time varying.



32. The velocity of sound wave in a given medium is V when its frequency is ν . The velocity, when frequency changes to 5ν is

$$(1) 5V$$

$$(2) V/5$$

$$(3) 25V$$

$$(4) V$$

33. A small block of material having relative density $1/3$ is immersed in a liquid & released. The block starts moving upwards with an acceleration ' a '. The value of ' a ' is (g is acceleration due to gravity)

$$(1) g$$

$$(2) 2g$$

$$(3) 3g$$

$$(4) 4g$$

34. A wooden plank of length ' L ' rests on a frictionless floor. A boy of mass ' M ' now runs over the plank starting from its one end. If mass of wooden plank is $M/5$, the distance covered by the boy relative to the ground will be

$$(1) L/6$$

$$(2) 5L/6$$

$$(3) L/5$$

$$(4) 4L/5$$

35. A rod of length ' l ' and mass ' m ' fixed at one end, is hanging vertically. The other end is now raised so that the rod makes an angle 30° with horizontal line. The work done in this process will be

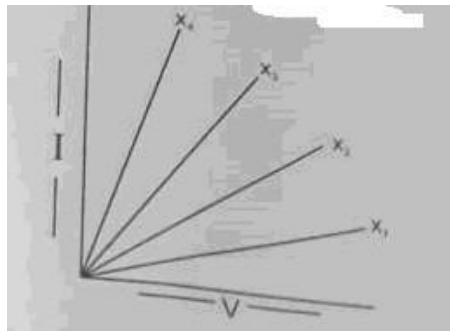
$$(1) mg\ell$$

$$(2) mg\ell/2$$

$$(3) mg\ell/3$$

$$(4) mg\ell/4$$

36. Graph shown V - I characteristics of two resistance their series combination & parallel combination. Identify the resistances values & graphs.



| Resistance-1 | Resistance-2 | Series | Parallel |
|--------------|--------------|--------|----------|
| (1) X_1 | X_2 | X_3 | X_4 |
| (2) X_2 | X_3 | X_1 | X_1 |
| (3) X_3 | X_2 | X_1 | X_4 |
| (4) X_4 | X_1 | X_2 | X_3 |

37. Two plane mirrors P & Q are kept at? With respect to each other. Light falls on P is reflected and then fall on Q and is reflected. The emergent ray is opposite to incident ray direction. The ? is equal to

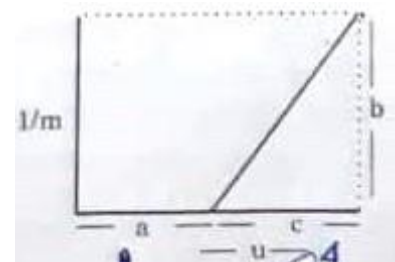
- (1) 45° (2) 30°
 (3) 60° (4) 90°

38. The magnetic field intensity (B) at distance 'r' from a long straight conductor carrying a steady current varies with 'r' as shown in figure



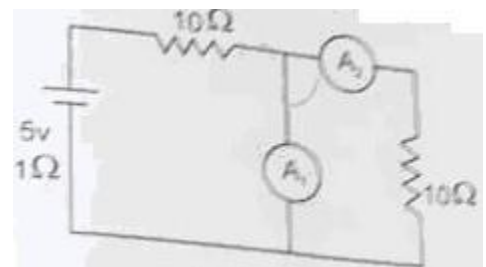
39. The graph in figure shown how the inverse of magnification ($1/m$) produced by a thin convex lens varies with object distance 'u' the power of lens will be

- (1) b/c (2) b/ca
 (3) bc/a (4) c/b



40. In the circuit shown all the measuring instrument are ideal. The reading in ammeter A_2 will be

- (1) $1/4A$ (2) $1A$
 (3) $<1/4A$ (4) Zero



41. Which of the following does not relate to the Non Cooperation Movement (1919) in India?
 (1) Renouncement of titles
 (2) To quit govt.. schools and colleges by the students
 (3) Disobeying govt. laws
 (4) Boycott of judicial courts by advocates
42. What does the novel 'Sevasadan' by Munshi Premchand mainly relate to?
 (1) Atrocities under colonial rule
 (2) Social problems like child marriage and dowry
 (3) Life of an orphan
 (4) Miseries of a poor peasant
43. Which of the following statements are correct regarding Liberal Nationalism in 19th century, Europe?
 (I) Right of Liberty and Equality
 (II) Formation of people's govt.
 (III) Ownership of private property
 (IV) Complete Control of govt. on all public and private property
 (1) I, II, III (2) IV, III, I
 (3) III, IV, II (4) I, II, IV
44. Which of the following statements are correct on Gandhiji's breaking the salt law to start Civil Disobedience Movements?
 (I) Salt was the need of rich and poor all
 (II) British Govt. agencies were allowed to make salt.
 (III) Only govt. agencies were allowed to make salt.
 (IV) Lord Irwin abolished tax on salt.
45. Which of the following statements are correct in relation to the great depression of 1929 in India? It led to –
 (I) Decline in trade
 (II) Steep hike in wheat prices..
 (III) Growth in industrial investment
 (IV) Fall in jute prices.
 (1) II, III, IV (2) I, II, III
 (3) I, III, IV (4) I, II, IV

Direction (Q. No. 46 to 49)

Read the statements and select the correct answer from the options given below

- (1) Statement I is true, Statement II is false
 (2) Statement I is false, Statement II is true
 (3) Both Statement are true and statement II provides explanation to statement I
 (4) Both Statement are true but statement II does not provide explanation of statement I
46. Statement I : Long years of war and the cost of extravagant court of the king drained the financial resources of France.
 Statement II : Only the members of the third estate had to pay taxes to the state.
47. Statement I: Russia army lost hadly in Germany and Austria in 1914 – 1916. All able bodied men were called to the war which led to scarcity of bread.
 Statement II : Tsarist autocracy collapsed in 1917.
48. Statement I : Railways were essential for colonial trade and for the movement of Imperial troops
 Statement II: The forests around the railway tracks fast started disappearing.
-

49. Statement I : Simon commission was opposed by all the political parties in India
Statement II : Lord Irwin announced inclusion of 80% Indian members into the Simon Commission
50. Arrange the following historical development in a chronological sequence
(I) Unification of Germany
(II) Unification of Italy
(III) The French Revolution
(IV) Treaty of Vienna
(1) I, II, III, IV (2) III, IV, II, I
(3) II, IV, III, I (4) IV, I, III, II
51. Arrange the following historical developments in a chronological sequence
(I) Poona Act
(II) Lahore congress; demand of 'Purna Swaraj'
(III) Establishment of 'oppressed class Association by Sh. B.R. Ambedkar
(IV) Second round table conference.
(1) I, II, III, IV (2) III, IV, II, I
(3) II, III, IV, I (4) IV, II, III, I
52. What does Mahatma Gandhiji's popular image in short dhoti and a spinning wheel depicts?
(1) Self reliance and resistance to use of British mill made cloth
(2) Easy and convenient way of living
(3) Living like a poor farmer in India
(4) Depiction of an indigenous image
53. Certain minerals may occur as alluvial deposits in sands of valley floors and the base of hills.
By which name these are known?
(1) Placer deposits (2) Manganese nodules
(3) Bromine (4) Malleable
54. Other than current fallow land is known as
(1) Left without cultivation for one or less than one agricultural years
(2) Left uncultivated for the past 1 to 5 agricultural year
(3) Area sown more than once in an agricultural year
(4) None of the above
55. Which one of the following are not used into rain fed storage structures that allowed the water in stand?
(1) Khadins (2) Johads
(3) Pit (4) Palar Pani
56. These are species whose population has declined are known as:
(1) Vulnerable species (2) Endangered species
(3) Extinct species (4) None of the above
57. To which one of the following types of vegetation does rubber belongs to?
(1) Tundra (2) Himalayan
(3) Mangrove forests (4) Tropical evergreen forests
58. In which of the following state is the Manas Bio – reserve located?
(1) Punjab (2) Assam
(3) Kerala (4) Orisa
59. The movement of the plates results in the building up of stresses within the plates and the continental rocks leading to
(1) Erosion (2) Weathering
(3) Folding (4) All above
-

60. Which name is given to the periodic development of a warm ocean current along the coast of Peru as a temporary replacement of the cold Peruvian current?
 (1) Kaal Baisakhi (2) El Nino
 (3) Monsoon (4) None of the above
61. Which one of the following statements is not true?
 (1) Coal that has been buried deep and subjected to increase temperatures is bituminous coal
 (2) Large reserves of natural gas have been discovered in the Krishana Godavri basin
 (3) The monazite sands to Tamil Nadu is also rich in Thorium
 (4) Photovoltaic technology converts sunlight directly into electricity
62. In India this primitive form of cultivation is called by different names. Select the correct answer using the code given below:
 1. Madhya Pradesh i. Pama Dabi or Kuman
 2. Odisha ii. Bear or Dahiya
 3. In Western Ghats iii. Jhumming
 4. North East region iv. Kumari
 (1) 1 – ii, 2 – i, 3 – iv, 4 – iii (2) 1 – i, 2 – ii, 3 – iii, 4 – iv
 (3) 1 – ii, 2 – iii, 3 – iv, 4 - i (4) 1 – iii, 2 – ii, 3 – i, 4 – iv
63. The following waterways have been declared as the National waterways by the Govt. Select the correct answer using the code given below:
 1. Allahabad and Haldia i. National Waterways no 3
 2. Kottapuram Kollamm ii. N. W. No 4
 3. Kakinada Puducherry stretch of canals iii. N. W. No 2
 4. Sadiya and Dhubri waterways iv. N. W. 1
 (1) 1 – iv, 2 – i, 3 – ii, 4 – iii (2) 1 – i, 2 – ii, 3 – iii, 4 – iv
 (3) 1 – ii, 2 – iii, 3 – iv, 4 - i (4) 1 – iii, 2 – iv, 3 – ii, 4 – i
64. Match the following:

| The major iron-ore belts in India | States |
|--|--------------------------|
| (1) Odisha-Jharkhand Belt | (i) Karnataka |
| (2) Durg-Bastar-Chandrapur Belt | (ii) Goa and Maharashtra |
| (3) Ballari chitradurga Chikkamangluru Tumakuru Belt | (iii) Chattisgarh |
| (4) Maharashtra-Goa Belt | (iv) Odisha |

 (1) 1–iv, 2–iii, 3–ii, 4–i (2) 1–i, 2–ii, 3–iii, 4–iv
 (3) 1–ii, 2–iv, 3–iii, 4–i (4) 1–iv, 2–iii, 3–i, 4–ii
65. Choose in **correct** statement from the following:
 (1) Election of Indian president is direct
 (2) Election of the prime-minister is direct
 (3) Ministers are appointed by the President on the advice of Prime-Minister
 (4) President presides over to cabinet meeting
66. Which of the following is **not** a permanent member of Security Council?
 (1) Britain (2) U.S.A.
 (3) China (4) Germany
67. Indian parliament's consists of –
 (1) President, Vice President and Rajya Sabha
-

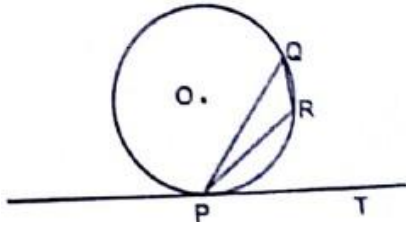
- (2) President, Lok Sabha and Rajya Sabha
(3) President and Rajya Sabha
(4) President, Vice President and Lok Sabha
68. Choose the odd pair of personalities from the following:
(1) Mrs. Indira Gandhi and Narendra Modi (2) Balram Jahkar and Shivraj Patil
(3) Narendra Modi and Sumitra Mahajan (4) Dr. Rajendra Prasad and Dr. V.V. Giri
69. Which of the following statement is **not** correct?
(1) Telangana is created from Orissa (2) Uttrakhand is created from U.P.
(3) Jharkhand is created from Bihar (4) Chattisgarh is created from M.P.
70. Who presides the joint session of parliament?
(1) President (2) Vice president
(3) Speaker of Lok Sabha (4) Prime-Minister
71. Which of the following is not a Political Party?
(1) INC (2) BJP
(3) AAP (4) RSS
72. Which of the following is a correct match?
(1) U Thant – Burma (2) Kofi Annan – Ghana
(3) Boutros Boutros Ghali – Iran (4) Kurt Waldheim - Austria
73. An industrialist Mr. Bajaj has made an investment of Rs 10 lacs on education. Rs 10 lacs on training and Rs 5 lacs on medical care of the employees of his company. His efforts are towards strengthening to
(1) Working capital (2) Human capital
(3) Fixed capital (4) Capital growth
74. If a farmer's cost of production to produce one quintal of wheat is Rs 1800, then Govt of India has adopted a principle to have at least MSP as below
(1) Rs 2700 (2) Rs 1800
(3) Rs 3600 (4) Rs 2000
75. Assume there are three families lives in a village. In family of Mr Ramlal and Mr Anil work on their fields and younger son Mr Sunil is lawyer in district court in family of Shyamlal only son Mr Dinesh work in a nearby having of making spare parts of motorcycle of an engineer. In family of Mr Mohanlal has two daughters older Monika is a insurance agent and younger Neema runs her internet café. Thus, what is the ratio of economic sectors in which people of this village are engaged?
(1) Primary 20%, Secondary 60%, Tertiary 20%
(2) Primary 60%, Secondary 20%, Tertiary 20%
(3) Primary 20%, Secondary 20%, Tertiary 60%
(4) Primary 20%, Secondary 20%, Tertiary 40%
76. XYZ bank has Rs 10000 crores public deposits and interested to utilize 7500 crores of its funds. In your opinion. Which of the following activity do you find more better option for bank.
(1) by renovating all existing branches (2) by deposit it to central bank
(3) by opening many new branches (4) by extending loans
-

77. Following are some activities:-
 (1) Giving seeds and fertilizers subsidy to the farmers
 (2) Cultivating wheat
 (3) Making atta from wheat
 (4) Providing storage facility for the wheat
 Out of the above, which activity/activities relates to primary sector-
 (1) A, B, D (2) A, B
 (3) B (4) B, D
78. Income alone is not a completely adequate indicator of development of a country. Which one of the following statement is incorrect in this regard?
 (1) Money cannot ensure a pollution free environment for individual
 (2) Some people earn more than others do
 (3) Money does ensure respect and dignity
 (4) Money helps us buy material goods and services only
79. Match column -I with the statement of column-II
- | Column - I | | Column - II | |
|------------|-------------------------|-------------|--|
| (A) | Right to inform | (i) | When I buy an electric iron and suffered electric shock while using it |
| (B) | Right to choice | (ii) | When I purchased a packet from post office but not delivered yet |
| (C) | Right to safety | (iii) | When I buy a shirt from company outlet, instruction for washing it was tagged on it |
| (D) | Right to seek redressal | (iv) | When I have take a gas connection dealer insisted me to buy stove from them with the connection but I denied |
- (1) A-i, B-ii, C-iii, D-iv (2) A-ii, B-iv, C-i, D-iii
 (3) A-iv, B-iii, C-ii, D-i (4) A-iii, B-iv, C-i, D-ii
80. There are a variety of ways in which the MNCs are spreading their production and interacting with local producers in various countries across the world? Which one is not feasible?
 (1) By setting up partnership with local companies
 (2) By using the local companies for supplies
 (3) By imposing restriction on trade of local companies
 (4) By closely competing with local companied or buying them
81. In $\triangle ABC$, $\angle ABC = 90^\circ$ and $\angle BAC = 60^\circ$. If bisector of $\angle BAC$ meets BC at D. Then BD:DC is
 (1) 1: 2 (2) $1:\sqrt{3}$
 (3) $1:\sqrt{2}$ (4) 1 : 1
82. a and b are roots of the quadratic equation $x^2 + 5x + d = 0$ and a and c are roots of the quadratic equation $x^2 + 6x + 2d = 0$. If there is only one common root of the above two equations, then the possible value of d is
 (1) 2 (2) -2
 (3) 4 (4) -4
83. Sum of the length of all edges of a cube is x metres. If the surface area of the cube is x sq. metres, then its volume (in cubic metres)
 (1) x^3 (2) 8
 (3) x (4) 2
84. ABC is a right angled triangle, right angled at $\angle B$. If side AB is divided into three equal parts by points D and E such that D is nearer to A, then $\frac{AC^2 - EC^2}{DC^2 - BC^2}$ is equal to

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

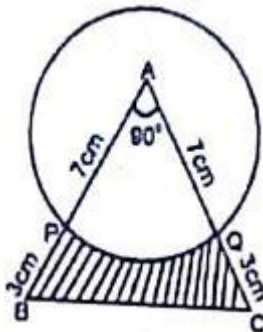
85. There are 15 APs whose common differences are 1, 2, 3,.....15 respectively, the first term of each being 1. Then sum of their 15th terms is
 (1) 1695 (2) 1792
 (3) 1800 (4) 1924
86. ABC is a triangle in which AB = 10 cm. AC = 24 cm and BC = 26 cm. If AD is its median then length of AD is
 (1) 12 cm (2) 12.5 cm
 (3) 13 cm (4) 14.75 cm
87. The decimal expansion of the number $\frac{14588}{8750}$ will
 (1) terminate after two decimal places (2) terminate after three decimal places
 (3) terminate after four decimal place (4) not terminate
88. All the zeroes of the polynomial $x^3 + 2x^2 + a$ are also zeroes of the polynomial $x^5 - x^4 - 4x^3 + 3x^2 + 3x + b$. Then, the values of a and b are respectively
 (1) -1 and 2 (2) -1 and -2
 (3) 1 and -2 (4) 1 and 2
89. Present age of a father is six times his son's age. After four years, the age of the father will be four times his son's age. The present ages (in years) of the father and son are respectively.
 (1) 24 and 4 (2) 30 and 5
 (3) 36 and 6 (4) 28 and 7
90. The largest number which divides 72 and 127 leaving remainders 7 and 10 respectively is
 (1) 845 (2) 458
 (3) 65 (4) 13
91. The line segment joining the points A(2, -2) and B(-7, 4) is trisected at the points P and Q (P is nearer to A). if coordinates of P and Q are (a, 0) and (-4, b) respectively, then the values of a and b are respectively
 (1) 1 and 2 (2) -1 and 2
 (3) 1 and -2 (4) -1 and -2
92. $\frac{\cos\theta - \sin\theta + 1}{\cos\theta + \sin\theta - 1}$ is equal to
 (1) $\sec\theta + \tan\theta$ (2) $\sec\theta - \tan\theta$
 (3) $\operatorname{cosec}\theta - \cot\theta$ (4) $\operatorname{cosec}\theta + \cot\theta$
93. From the top of a 60 m high tower, the angles of depression of the top and bottom of pillar are 30° and 60° respectively. Then the height of the pillar is
 (1) 20 m (2) $20\sqrt{3}$ m
 (3) 40 m (4) $40\sqrt{3}$ m
94. The diagonals of a quadrilateral ABCD are perpendicular to each other. Then the quadrilateral formed by joining the mid-points of its side(in order) is a
 (1) kite (2) rectangle
 (3) rhombus (4) square

95. In figure PQ, is a chord of a circle with centre O and PT is its tangent at P. If $\angle QPT = 60^\circ$, then $\angle PRQ$ is



- (1) 105° (2) 115°
 (3) 120° (4) 130°

96. A momento is made as shown in the figure. Its base PBCQ is silver plated from the front side.



The silver plated area is (use $\pi = \frac{22}{7}$)

- (1) 11 cm^2 (2) 11.5 cm^2
 (3) 12.5 cm^2 (4) 13 cm^2

97. A bucket is in the form of a frustum of a cone and it can hold 28.49 litres of water. The radii of the top and bottom of the bucket are 28 cm and 21 cm respectively. Then slant height of the bucket is (use $\pi = \frac{22}{7}$)

- (1) 15 cm (2) $\sqrt{246}$ cm
 (3) $\sqrt{253}$ cm (4) $\sqrt{274}$ cm

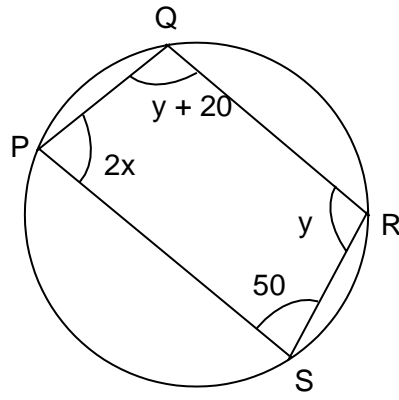
98. Two dice are thrown at the same time. The probability that, the sum of two numbers appearing on the top of the dice is greater than 6 but less than 9, is

- (1) $\frac{11}{36}$ (2) $\frac{1}{3}$
 (3) $\frac{5}{6}$ (4) $\frac{4}{9}$

99. A person can row a boat at 10 km/h in still water. He takes two and half hours to row from A to B and back. If the distance between A and B is 12 km, then the speed of the stream is

- (1) 3 km/h (2) $2\frac{1}{2}$ km/h
 (3) 2 km/h (4) $1\frac{1}{2}$ km/h

100. In the figure, points P, Q, R and S lie on a circle. Then the values of x and y are respectively



- (1) 40° and 100°
- (3) 50° and 80°

- (2) 35° and 110°
- (4) 30° and 120°

PRASHNOTTAR