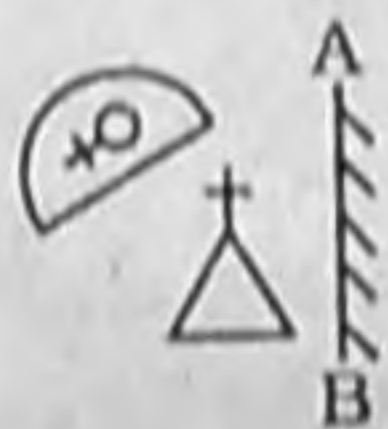


1. Which of the fractions given below, when added to  $\frac{5}{8}$ , gives 1 ?

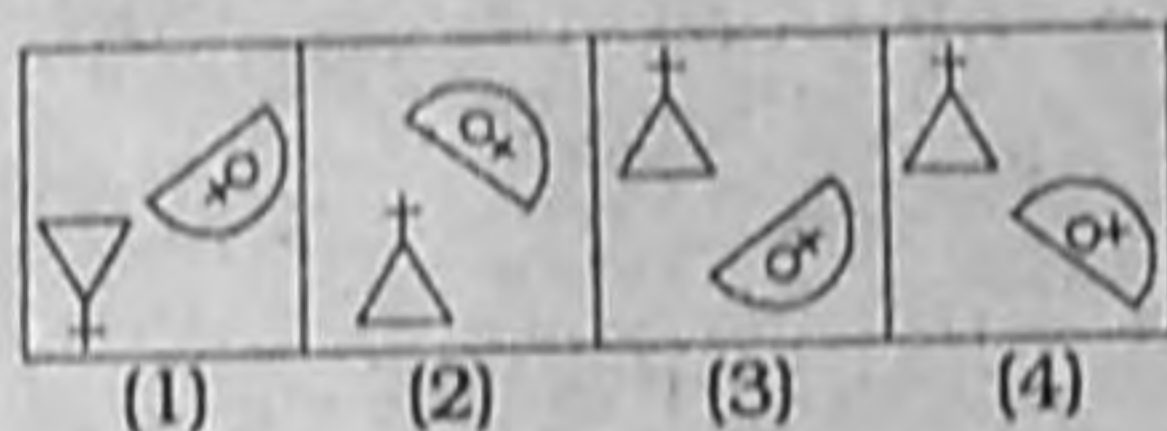
- (1)  $\frac{6}{24}$       (2)  $\frac{5}{2}$   
 (3)  $\frac{6}{16}$       (4)  $\frac{6}{3}$

2. Choose the correct mirror image of the problem figure if the mirror is placed to the right of the figure.

**Question Figure :**



**Answer Figures**



3. Elements A, B and C occur as Dobereiner's triads. If the atomic mass of A is 7 and that of C is 39, what will be the atomic mass of B ?

- (1) 23      (2) 12  
 (3) 20      (4) 40

4. There are saplings of 361 Mango tree and Neem tree in a garden. The ratio of the number of Mango tree to that of Neem tree saplings is 8 : 11, how many Neem tree saplings are in the garden ?

- (1) 209      (2) 152  
 (3) 171      (4) 57

5. A sum of money was invested at the rate of 7.5% simple interest per annum for 4 years. If the investment was for 5 years, the interest earned would have been Rs. 375 more. What was the initial sum invested ?

- (1) Rs. 4500    (2) Rs. 5000  
 (3) Rs. 3750    (4) Rs. 4750

6. A body of 4.0 kg is lying at rest. Under the action of a constant force, it gains a speed of 5 m/s. The work done by the force will be \_\_\_\_\_.

- (1) 20 J      (2) 50 J  
 (3) 30 J      (4) 40 J

7. Two pipes, when working one at a time, can fill a cistern in 3 hours and 4 hours, respectively while a third pipe can drain the cistern empty in 8 hours. All the three pipes were opened together when

the cistern was  $\frac{1}{12}$  full. How long did it take for the cistern to be completely full ?

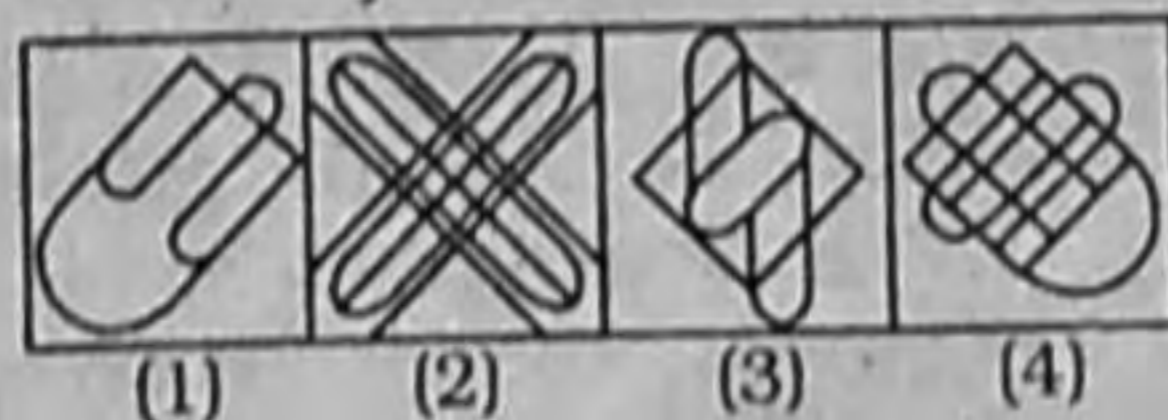
- (1) 2 hours  
 (2) 1 hour 45 minutes  
 (3) 2 hours 11 minutes  
 (4) 2 hours 10 minutes

8. The below figure is embedded in one of the answer figures. Choose the correct figure containing the below figure.

**Question Figure :**



**Answer Figures :**



9. Odisha often faces natural disasters due to \_\_\_\_\_.

- (1) earthquakes  
 (2) cyclones  
 (3) rainfall  
 (4) drizzle

10. Who among the following laid the foundation of chemical sciences by establishing two important laws of chemical combination ?

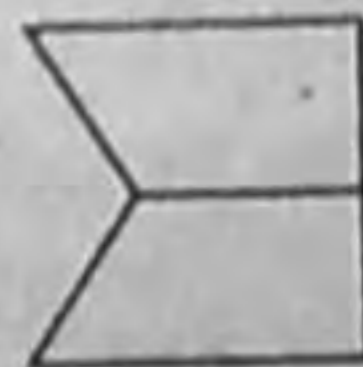
- (1) Ernest Rutherford  
 (2) Democritus  
 (3) Joseph L. Proust  
 (4) Antoine L. Lavoisier

11. If  $3x^2 + ax + 4$  is perfectly divisible by  $x - 5$ , the value of a is :

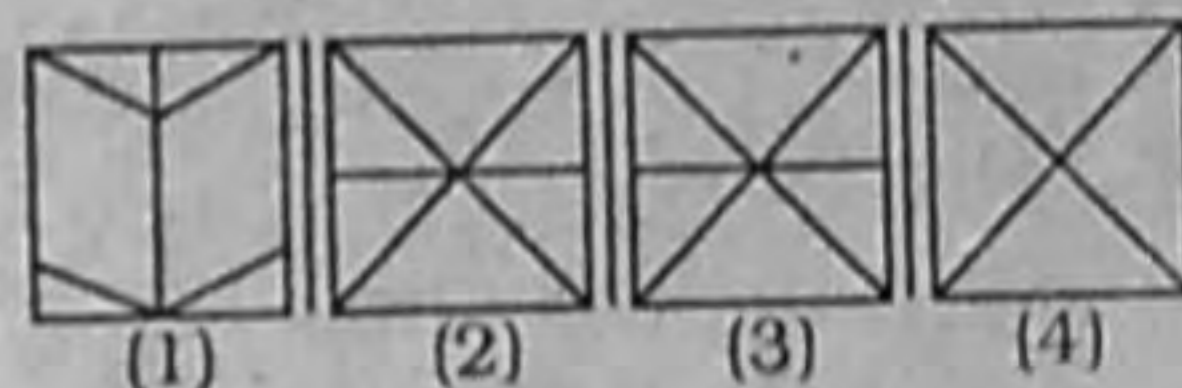
- (1) -12      (2) -5  
 (3) -15.8    (4) -15.6

12. The following figure is embedded in one of the four answer figures. Which figure contains the problem figure ?

**Question Figure :**



**Answer Figures :**



13. Solve the following :

$$-\frac{1}{4} \{-45 - (-96) \div (-32)\} = ?$$

- (1) 12      (2) 10.5  
 (3) -12      (4) -10.5

14. If you look into a mirror and find that the image (your reflexion) is smaller than you, then the type of the mirror is :

- (1) plano-concave mirror  
 (2) concave mirror  
 (3) plane mirror  
 (4) convex mirror

15. In a computer game, a builder can build a wall in ten hours while a destroyer can demolish such a wall completely in fourteen hours.

Both, the builder and the destroyer were initially set to work together on level ground. But after 7 hours the destroyer was taken out. What was the total time (in hours) taken to build the wall?

- (1) 15 (2) 17  
(3) 24 (4) 35

16. To draw a pair of tangents to a circle which are inclined to each other at an angle of  $75^\circ$ , it is required to draw tangents at the end points of those two radii of the circle, the angle between whom is

- (1)  $65^\circ$  (2)  $75^\circ$   
(3)  $95^\circ$  (4)  $105^\circ$

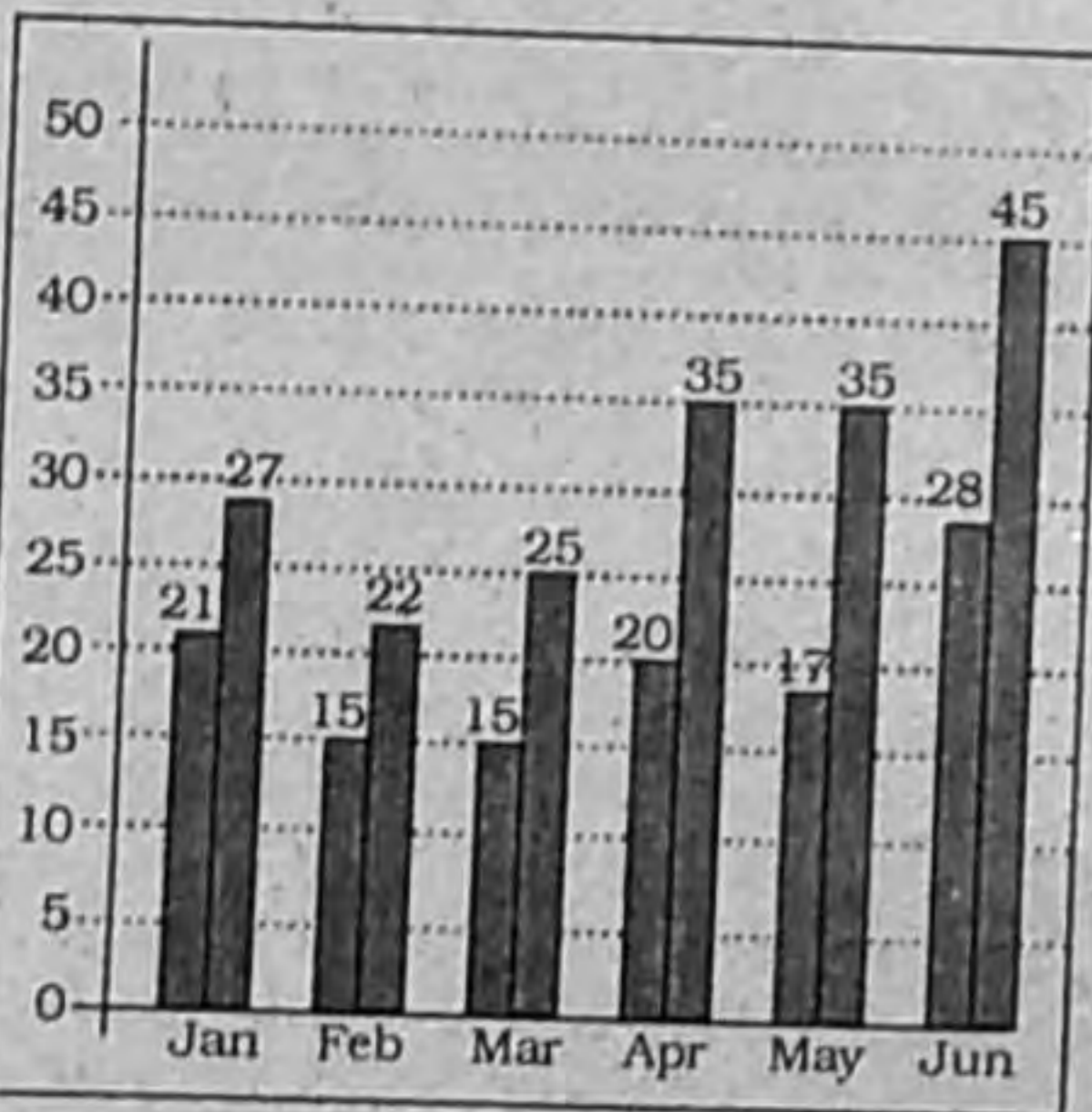
17. If  $\cot^4\theta + \cot^2\theta = 3$ , then  $\operatorname{cosec}^4\theta - \operatorname{cosec}^2\theta = ?$

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

18. 'Madhya Pradesh' is related to 'Diamond' in the same way as 'Karnataka' is related to

- (1) Silver (2) Platinum  
(3) Gold (4) Copper

19.



The given data shows the registration of bikes and total vehicles (in thousands) for 6 months in 2017 in city X.

Note : In the chart, the first number represents bikes and the second number represents total vehicles.

Based on the given data, from January to April 2017, the

increase in the registration of vehicles other than bikes is

- (1) 8000 (2) 9050  
(3) 8500 (4) 9000

20. If  $a + b + c = 0$ ,  $(a^3 + b^3 + c^3)^2 = ?$

- (1)  $3a^2b^2c^2$  (2)  $9a^2b^2c^2$   
(3)  $9abc$  (4)  $27abc$

21. Consider the argument and decide which of the given assumptions is/are implicit.

**Argument :**

Public smoking is an offence under the law.

**Assumptions :**

I. Smoking is injurious to the health of the person who smoke.

II. Smoke is injurious even to others health in the public places.

- (1) Both I and II are implicit  
(2) Neither I nor II is implicit  
(3) Only assumption II is implicit  
(4) Only assumption I is implicit

22. Choose the correct alternative which will complete the series.

ACT, EGG, INK, \_\_\_\_\_

- (1) BYE (2) OLD  
(3) FUN (4) DIP

23. Which state government has made yoga guru Ramdev Baba as the brand ambassador of Yoga and Ayurveda ?

- (1) Haryana  
(2) Uttar Pradesh  
(3) Himachal Pradesh  
(4) Rajasthan

24. Consider the given statements as true and decide which of the given Conclusions can definitely be drawn from the given statements.

**Statements :**

People think that paying tax to the government is a burden and waste. Hence, they avoid paying tax or don't pay tax promptly.

**Conclusions :**

I. Government should create awareness among the people that paying tax helps to build nation.

II. Tax should be increased so that more money is collected.

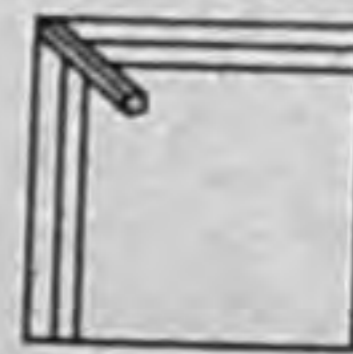
- (1) Both I and II follow.  
(2) Only Conclusion I follows.  
(3) Neither I nor II follows.  
(4) Only Conclusion II follows.

25. The main cause of rancidity in foods is the \_\_\_\_\_ of fats and oils.

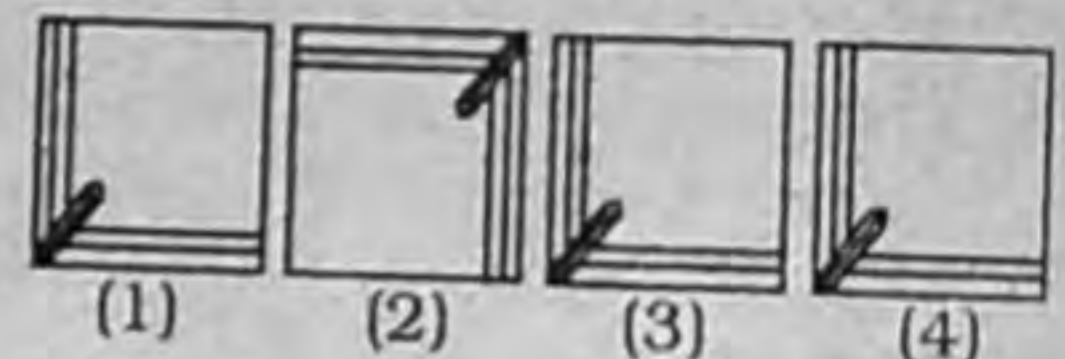
- (1) hydrolysis  
(2) oxidation  
(3) clarification  
(4) reduction

26. Which of the Answer Figures is the correct water image for the given Problem figure ?

**Question Figure :**



**Answer Figures :**



27. Mr. X starts from point 'A' travels 80 km towards west, takes a left turn, travels 50 km and reaches point 'B'. What is the shortest distance between points 'A' and 'B' ?

- (1)  $10\sqrt{93}$  (2)  $10\sqrt{39}$   
(3)  $10\sqrt{98}$  (4)  $10\sqrt{89}$

28. The mean height of 25 boys in a class is 150cm, and the mean height of 35 girls in the same class is 145 cm. The combined mean height of 60 students in the class is \_\_\_\_\_ (approximately)

- (1) 143 (2) 145  
(3) 146 (4) 147

29. Which of the following serves as a nutritive tissue for the growing embryo ?

- (1) Ovule (2) Ovary  
(3) Endosperm  
(4) Zygote

30. Choose the correct analogous word-pair from the given alternatives.

- Carpenter : Saw  
(1) Crane : Builder  
(2) Computer : Writer  
(3) Plumber : Wrench  
(4) Axe : Logger

31. The 2016 Olympics was held in which city ?

- (1) Paris  
(2) Mexico City  
(3) Rio de Janeiro  
(4) London

32. Solve the following :

- $27 - [38 - \{46 - (15 - 13 - 2)\}]$   
(1) 35 (2) 31  
(3) 29 (4) 30

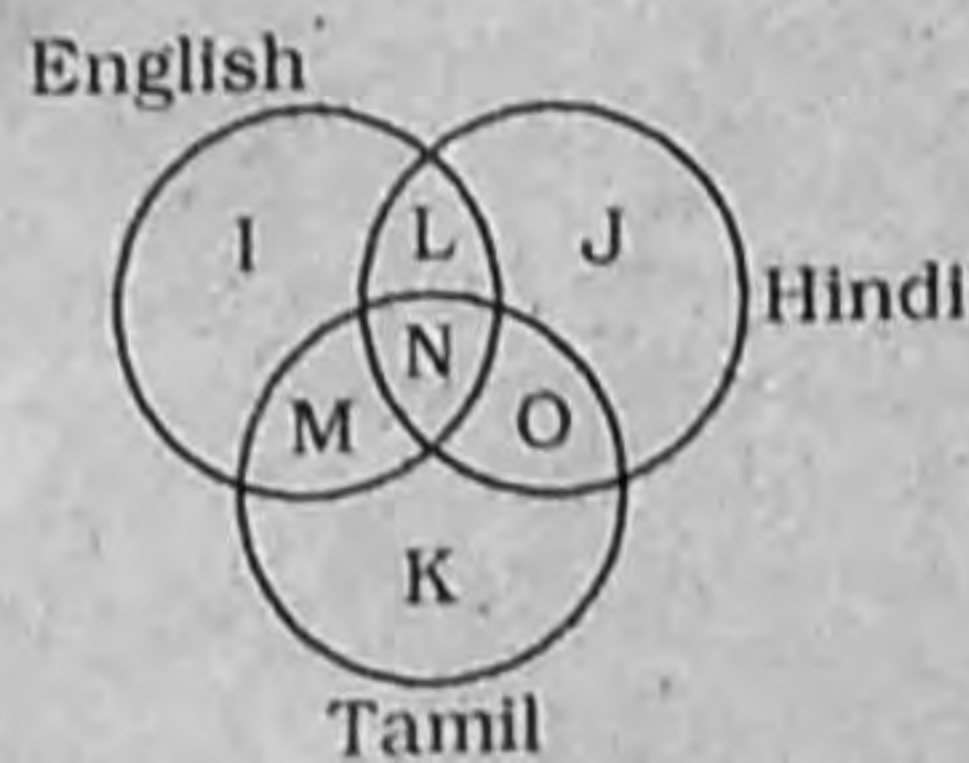
33. The 'Kathopanishad' captures the conversation between a young boy named Nachiketas and a god. Which of the following gods is talking to Nachiketas ?

- (1) Lord Yama  
(2) Lord Shiva  
(3) Lord Indra  
(4) Lord Karthikeya

34. The focal length of a concave mirror with a radius of curvature of 20.0 cm is :

- (1) 15 cm (2) 20 cm  
(3) 5 cm (4) 10 cm

35. The given Venn diagram represents the students who can speak different languages. According to it, the total number of students who can speak exactly two languages is \_\_\_\_.



(1) L + M + O

(2) N + L

(3) L + O

(4) L + M + O + N

36. A battlefield always has :

- (1) Arrows (2) Elephants  
(3) Chariots (4) Soldiers

37. The surface areas of three faces of a cuboid sharing a vertex are  $20 \text{ m}^2$ ,  $32 \text{ m}^2$  and  $40 \text{ m}^2$ . What is the volume of the cuboid ?

- (1)  $92 \text{ m}^3$  (2)  $\sqrt{3024} \text{ m}^3$   
(3)  $160 \text{ m}^3$  (4)  $184 \text{ m}^3$

38. An object with a mass of 22 kg moving with a velocity of 5 m/s possesses a kinetic energy of :

- (1) 275 J (2) 110 J  
(3) 1100 J (4) 2750 J

39. Which of the following is a reducible fraction ?

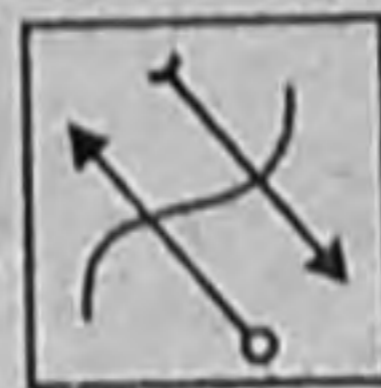
- (1)  $\frac{91}{15}$  (2)  $\frac{79}{26}$   
(3)  $\frac{105}{112}$  (4)  $\frac{41}{17}$

40.  $\frac{2}{3}$  of a milk-water mixture was milk. There was 21 litres of the mixture. If 4 litres of water is added to it, the percentage of milk in the new mixture will be :

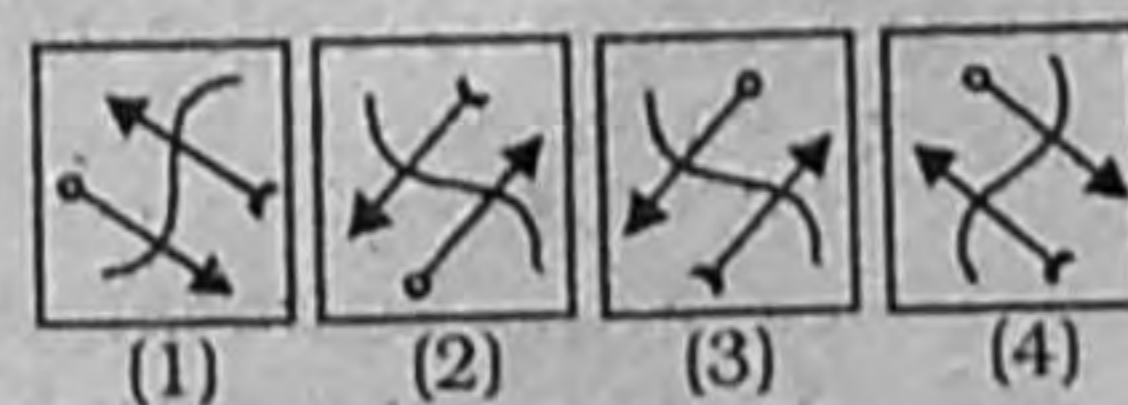
- (1) 44 (2) 56  
(3) 14 (4) 11

41. Choose the correct water image of the problem figure.

Question Figure :



Answer Figures :



42. The Dadasaheb Phalke Award is awarded for significant public achievement in which field ?

(1) Films

(2) Journalism

(3) Literature

(4) Sports

43. The value of  $-261 + (-380) - (-521) + 821 - (-121)$  is :

- (1) 800 (2) 825  
(3) 822 (4) 833

44. The resistance of a conductor is inversely proportional to its :

- (1) temperature  
(2) resistivity  
(3) area of cross section  
(4) length

45. Which of the following is essential for the synthesis of thyroxin ?

- (1) Potassium  
(2) Sodium  
(3) Calcium  
(4) Iodine

46. The girth of the stem or root in plants increases due to :

- (1) Lateral meristem  
(2) Intercalary meristem  
(3) Extra meristem  
(4) Apical meristem

47. Consider the given question and decide which of the following statements is sufficient to answer the question. Who among P, Q, R, S and T is lightest in weight ?

Statements :

I. Q weight < P and S also S weight > T

II. R weight > Q but < T

- (1) Statement II alone is sufficient while statement I alone is insufficient  
(2) Both statement I and II are sufficient  
(3) Neither statement I nor II is sufficient  
(4) Statement I alone is sufficient while statement II alone is insufficient

48. Which of the following metals is stored in kerosene oil ?

- (1) Platinum (2) Copper  
(3) Sodium (4) Gold

49. The following table gives the details of the number of students in class 10, sections A and B who had taken mid-term and final exam.

| Result   | Sec A | Sec B |
|--|-------|-------|
| Total number of students who failed in both exams                    | 28    | 23    |
| Total number of students who failed in mid-term but passed in finals | 14    | 12    |
| Total number of students who passed in mid-term but failed in finals | 6     | 17    |
| Total number of students who passed in both the exams                | 64    | 55    |

The percentage of students in section A is \_\_\_\_\_ (round to one decimal place).

- (1) 51 (2) 51.1  
(3) 51.3 (4) 51.2
50. Which Indian Chief Minister's father was a 'Maharaja' ?  
(1) Chandrababu Naidu  
(2) Devandra Fadnavis  
(3) K Chandrasekhar Rao  
(4) Amarinder Singh
51. Which eminent Hindi writer was chosen for the Vyas Samman 2017 for her work 'Dukham Sukham' ?  
(1) Namita Gokhale  
(2) Meena Kandasamy  
(3) Jhumpa Lahiri  
(4) Mamta kalia
52. The two sides holding the right-angle in a right-angled triangle are 3 cm and 4 cm long. The area of its circum-circle will be  
(1)  $5\pi \text{ cm}^2$  (2)  $7\pi \text{ cm}^2$   
(3)  $6.75\pi \text{ cm}^2$  (4)  $6.25\pi \text{ cm}^2$
53. Who won the 2017 Hridaynath Mangeshkar Award ?  
(1) Javed Akhtar  
(2) Asha Bhosle  
(3) Shabana Azmi  
(4) Anupam Kher

54. To convert temperature from Celsius to Kelvin scale, you must :

- (1) multiply the given temperature by 273  
(2) add 273 to the given temperature  
(3) divide the given temperature by 273  
(4) subtract 273 from the given temperature

55. A body of mass 2 kg is thrown upward with initial velocity of 20 m/s. After 2 seconds, its kinetic energy will be : ( $g = 10 \text{ m/s}^2$ )

- (1) 100 J (2) 0 J  
(3) 400 J (4) 200 J

56. Select the odd figure out of the following figure series.

|   |   |   |   |   |
|---|---|---|---|---|
| A | F | I | Z | L |
| 1 | 2 | 3 | 4 | 5 |

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

57. If the number 1 on the clock is replaced by the letter 'M', the number 2 is replaced by 'N' and so on, then when the time is 21:00 p.m. the hour hand will be at \_\_\_\_\_ letter.

- (1) S (2) T  
(3) U (4) V

58. Find the missing term in the letter series.

BGL, DIN, \_\_\_\_\_, HMR

- (1) FKP (2) FPK  
(3) EJO (4) GLQ

59. Sharan and Mayukh, working together, can complete a task in 18 days. However, Mayukh works alone and leaves after completing one-third of the task. Then, Sharan takes over and completes the remaining work by himself. As a result, the duo could complete the task in 40 days. How many days would Sharan alone have taken to do the job if Mayukh had worked faster than Sharan ?

- (1) 45 (2) 30  
(3) 72 (4) 24

60. Decide which of the Conclusions logically follow(s) from the information given in the statement.

**Statements :**

Politicians marry only beautiful girls.

X is beautiful.

**Conclusions :**

- I. X will marry a politician  
II. X won't marry a politician  
(1) Only Conclusion I follows  
(2) Only Conclusion II follows  
(3) Either I or II follows  
(4) Both I and II follow
61. Three-fifths of my current age is the same as five-sixths of that of one of my cousins'. My age ten years ago will be his age four years hence. My current age is \_\_\_\_\_ years.

- (1) 55 (2) 45  
(3) 60 (4) 50

62. 'Food' is related to 'Refrigerator' in the same way as 'Clothes' is related to \_\_\_\_\_.

- (1) Garage  
(2) Closet  
(3) Fold  
(4) Material

63. Which of the following never occurs singly in nature ?

- (1) Inertia  
(2) Force  
(3) Momentum  
(4) Velocity

64. Which of the numbers given below is NOT rational ?

- (1)  $\sqrt[3]{64}$  (2)  $\sqrt[2]{64}$   
(3)  $\sqrt[2]{8}$  (4)  $\sqrt{8}$

65. Which of the following gases is not generated in a biogas plant ?

- (1) CO (2)  $\text{H}_2\text{S}$   
(3)  $\text{CH}_4$  (4)  $\text{CO}_2$

66. Name the Indian paralympic high jumper who won gold at the Rio Paralympics. He was awarded the Padma Shri in 2017.

- (1) Narender Ranbir
- (2) Varun Bhati
- (3) Mariyappan Thangavelu
- (4) Devendra Jhajharia

67. Which was the first country to introduce GST in its system ?

- (1) Canada (2) France
- (3) Australia (4) Germany

68. Chlorine gas is used in the manufacture of :

- (1) Baking powder
- (2) Baking soda
- (3) Bleaching powder
- (4) Washing soda

69. If the atomic number of Krypton is 36, then its electronic configuration is :

- (1) 2, 18, 16 (2) 2, 8, 18, 8
- (3) 2, 18, 8, 8
- (4) 2, 8, 20, 6

70. Consider the argument and decide which of the given assumptions is/are implicit.

**Argument :**

The BEST bus travels company has decided to increase its fare by 10%.

**Assumptions :**

- I. Passengers may opt for other buses costing less than the BEST bus travels company.
  - II. The demand for the buses by passengers may remain unchanged even after the fare hike.
- (1) Both I and II are implicit
  - (2) Only assumption II is implicit
  - (3) Only assumption I is implicit
  - (4) Neither I nor II is implicit

71. Rs. 750 invested for 3 months gave an interest of Rs. 18. What was the simple rate of interest per annum ?

- (1) 2.4% (2) 9.6%
- (3) 7.2% (4) 1.2%

72. Select the odd figure out of the given series.

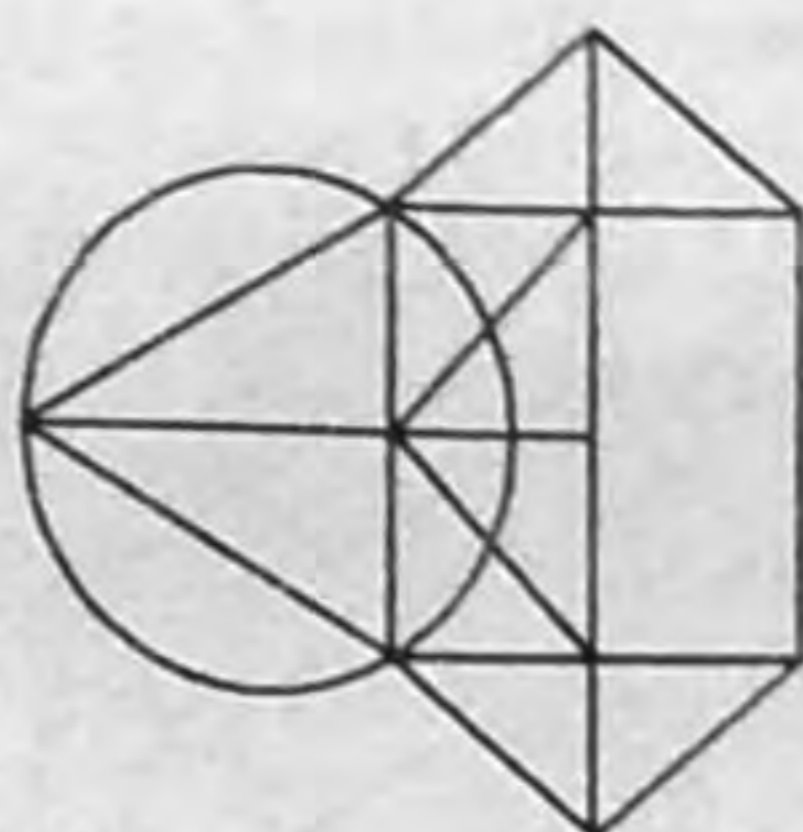


- (1) (2) (3) (4) (5)

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

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

73. How many triangles are present in the following figure ?



- (1) 12 (2) 15
- (3) 14 (4) 13

74. Metals react with acids to give :

- (1) A salt and Chlorine
- (2) A salt and base
- (3) A salt and Hydrogen
- (4) A salt and water

75. If \_\_\_\_\_ is involved, even greater diversity will be generated.

- (1) sexual reproduction
- (2) binary fission
- (3) vegetative propagation
- (4) asexual reproduction