# Sample Question Paper

1. The cost of $7\dfrac{2}{3}$ metres of string is ₹ $12\dfrac{3}{4}$, the cost per metre is ` _____.

   (A) $\dfrac{173}{35}$     (B) $\dfrac{153}{92}$

   (C) $\dfrac{53}{92}$     (D) $\dfrac{1173}{12}$

   (E) None of these

2. $\left(\dfrac{1}{2\dfrac{1}{3}}+\dfrac{1}{1+\dfrac{3}{4}}\right)$ is equal to _____.

   (A) $4\dfrac{1}{12}$     (B) $\dfrac{7}{14}$

   (C) $\dfrac{12}{49}$     (D) 1

   (E) None of these

3. The value of $\dfrac{1}{3+\dfrac{2}{2+\dfrac{1}{2}}}$ is _____.

   (A) 5/19     (B) 18/5
   (C) 4/5     (D) 5/4
   (E) None of these

4.  A positive number when decreased by 4 is equal to 21 times the reciprocal of the number. The number is _____ .
    (A) 3                           (B) 5
    (C) 7                           (D) 9
    (E) None of these

5.  The rectangle has length 15 m and perimeter P metres. Which equation could be used to find the width (w) of the rectangle ?
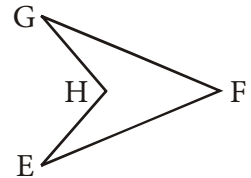
    (A) $P = 15 + \dfrac{w}{2}$      (B) $P = 15 - w$

    (C) $P = 30 + 2w$               (D) $P = 30 - 2w$
    (E) None of these

6.  The value of x for which $\dfrac{3-2x}{2} = \dfrac{3x+2}{3}$ is _____.

    (A) $\dfrac{5}{10}$             (B) $\dfrac{5}{11}$

    (C) $\dfrac{11}{5}$             (D) $\dfrac{5}{12}$

    (E) None of these

7.  The given quadrilateral EFGH is a _____ .
    (A) Parallelogram
    (B) Concave quadrilateral
    (C) Convex quadrilateral
    (D) Trapezium
    (E) None of these

8.  The exterior angle of a regular polygon is one-third of its interior angle. How many sides has the polygon ?
    (A) 10                          (B) 8
    (C) 9                           (D) 13
    (E) None of these

9.  To construct a quadrilateral uniquely, it is necessary to have the knowledge of at least _____ independent elements.
    (A) Four                        (B) Five
    (C) Three                       (D) Six
    (E) None of these

10. **Which of the following is not a perfect square ?**
    (A) 16384      (B) 23857      (C) 18496      (D) 11025
    (E) None of these

11. **If $\sqrt{0.01} + \sqrt{0.0064}$ = x, then the value of x is _____ .**
    (A) 0.3      (B) 0.03      (C) $\sqrt{0.18}$      (D) All of these
    (E) None of these

12. **The number must be subtracted from 16161 to get a perfect square is _____ .**
    (A) 31      (B) 32      (C) 33      (D) 34
    (E) None of these

13. **Parikshit makes a cuboid of plasticine of sides 5 cm, 2 cm, 5 cm. How many cuboids will he need to form a cube ?**
    (A) 10      (B) 20      (C) 30      (D) 50
    (E) None of these

14. **The value of $45^3 - 20^3 - 65^3$ is _____ .**
    (A) – 191500      (B) – 170000
    (C) 170000      (D) 175500
    (E) None of these

15. **Which of the following number is not a perfect cube ?**
    (A) 216      (B) 243
    (C) 1728      (D) 1331
    (E) None of these

16. **A sum of ₹ 1550 was lent partly at 5% and partly at 8% p.a. simple interest. The total interest received after 3 years was ₹ 300. The ratio of the money lent at 5% to that of lent at 8% is _____ .**
    (A) 5 : 8      (B) 8 : 5      (C) 16 : 15      (D) 31 : 6
    (E) None of these

17. **If S.P. of an article is $\dfrac{4}{3}$ of its C.P., then the profit % in the transaction is ____ .**

    (A) $\dfrac{1}{3}\%$                  (B) $20\dfrac{1}{2}\%$

    (C) $33\dfrac{1}{3}\%$               (D) $25\dfrac{1}{2}\%$
    (E) None of these

18. 30% of 140 = $x$% of 840, then the value of $x$ is _____.
    - (A) 5
    - (B) 15
    - (C) 24
    - (D) 60
    - (E) None of these

19. If $x = 2a - 3b + c$ and $y = 5a + 2b - 3c$, then $3x - 2y =$ _____ .
    - (A) $4a + 13b + 9c$
    - (B) $-4a + 13b + 9c$
    - (C) $-4a - 13b - 9c$
    - (D) $-4a - 13b + 9c$
    - (E) None of these

20. The value of $\dfrac{(0.0347)^3 + (0.9653)^3}{(0.0347)^2 - 0.0347 \times 0.9653 + (0.9653)^2}$ is _____ .
    - (A) 1
    - (B) 10
    - (C) 30
    - (D) 20
    - (E) None of these

21. The product of $(5x + 3x^2 - 7)$ and $(2 + 3x)$ is _____ .
    - (A) $9x^3 - 21x^2 + 11x - 14$
    - (B) $9x^3 + 21x^2 - 11x - 14$
    - (C) $9x^3 + 21x^2 - 11x + 14$
    - (D) $9x^3 - 21x^2 - 11x + 14$
    - (E) None of these

22. If at least one angle of a polygon is more than 180°, then it is called a _____ .
    - (A) parallelogram
    - (B) concave polygon
    - (C) convex polygon
    - (D) trapezium
    - (E) None of these

23. To construct a parallelogram, the minimum number of measurements required is _____ .
    - (A) 5
    - (B) 4
    - (C) 3
    - (D) 2
    - (E) None of these

24. With four given lengths, we can always form
    - (A) exactly one quadrilateral
    - (B) at the most one quadrilateral
    - (C) several quadrilaterals
    - (D) either none or several quadrilaterals
    - (E) None of these

25. The value of $\dfrac{2^{2001} + 2^{1999}}{2^{2000} - 2^{1998}}$ , is _____.
    - (A) 2
    - (B) 10/3
    - (C) $2^{1000} + 1$
    - (D) 10
    - (E) None of these

26. The standard form of 15240000 is _____.
    (A) $1.524 \times 10^7$      (B) $1.524 \times 10^6$
    (C) $15.24 \times 10^7$      (D) $1.524 \times 10^8$
    (E) None of these

27. Number of prime factors in $\dfrac{6^{12} \times (35)^{28} \times (15)^{16}}{(14)^{12} \times (21)^{11}}$ is _____.
    (A) 56      (B) 66      (C) 112      (D) 212
    (E) None of these

28. Factorisation of $1 + p + pq + p^2q$ is _____.
    (A) $(1 - q)(1 - pq)$      (B) $(1 + q)(1 + pq)$
    (C) $(1 + p)(1 + pq)$      (D) $(1 - p)(1 - pq)$
    (E) None of these

29. The value of $\dfrac{(0.137 + 0.098)^2 - (0.137 - 0.098)^2}{0.137 \times 0.098}$ is _____.
    (A) 4      (B) 0.25      (C) 0.039      (D) 0.235
    (E) None of these

30. Factorisation of $x^2 - 2xy - z^2 + y^2$ is _____.
    (A) $(x - y + z)(x - y - z)$      (B) $(x - y + z)(x + y + z)$
    (C) $(x - y + z)(x + y - z)$      (D) $(x + y + z)(x + y + z)$
    (E) None of these

31. 14 pumps of equal capacity can fill a tank in 6 days. If the tank has to be filled in 4 days, the number extra pumps needed is _____ .
    (A) 7      (B) 14      (C) 21      (D) 28
    (E) None of these

32. A truck needs 54 litres of diesel for covering a distance of 297 km. The diesel required by the truck to cover a distance of 550 km is _____ .
    (A) 100 litres      (B) 50 litres
    (C) 25.16 litres      (D) 25 litres
    (E) None of these

33. If $p : q = 3 : 4$ and $q : r = 8 : 9$, then $p : r$ is _____ .
    (A) 1 : 3      (B) 3 : 2
    (C) 2 : 3      (D) 1 : 2
    (E) None of these

34. **The probability of occurrence of an event is _____.**

    (A) $\dfrac{\text{Number of trials in which an event occured}}{\text{Total numberof trials} - \text{Number of trials in which event occured}}$

    (B) $\dfrac{\text{Number of trials in which event occured}}{\text{Total numberof trials}}$

    (C) $\dfrac{\text{Total numberof trials}}{\text{Number of trials in which event occured}}$

    (D) $\dfrac{\text{Total numberof trials} - \text{Number of trials in which event occured}}{\text{Number of trials in which event occured}}$

    (E) None of these

35. **In a survey of 200 ladies, it was found that 82 like coffee while 118 dislike it. From these ladies, one is chosen at random. The probability that the chosen lady dislikes coffee is**

    (A) $\dfrac{59}{100}$  (B) $\dfrac{41}{100}$  (C) $\dfrac{100}{59}$  (D) $\dfrac{100}{41}$

    (E) None of these

36. **Euler's formula for any polyhedron, where F is the numberof faces, V stands for number of vertices and E stands for number of edges is _____.**
    (A) F + V + E = 2        (B) F − V + E − 2
    (C) F + V − E = 2        (d) F − V − E = 2
    (E) None of these

37. **The percentage increase in the surface area of a cube when each side is doubled is _____.**
    (A) 25%      (B) 50%      (C) 150%      (D) 300%
    (E) None of these

38. **The sides of a triangle are 50 cm, 78 cm gnd 112 cm. The smallest altitude is _____.**
    (A) 20 cm      (B) 30 cm      (C) 40 cm      (D) 50 cm
    (E) None of these

39. **The area of a circle and a square are equal, the ratio of the sides of the square to the radius of the circle is _____.**
    (A) $1 : \sqrt{\pi}$              (B) $\sqrt{\pi} : 1$
    (C) $\sqrt{2} : 1$              (D) $1 : \sqrt{2}$
    (E) None of these

**40.** The length of perpendicular from the centre on a chord is 1 cm. If the chord subtends the angle at the centre is 90°, then the length of the chord is _____.
(A) 2 cm      (B) 1 cm      (C) 4 cm      (D) 3 cm
(E) None of these

**41.** In a certain code language, '253' means 'books are old', '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code ?
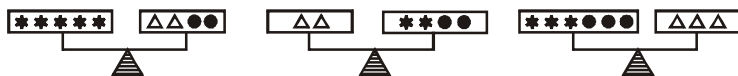(A) 2      (B) 4      (C) 5      (D) 6
(E) None of these

**42.** In which figure does the shaded part represents 0.3 ?

(A)     (B)     (C)     (D)
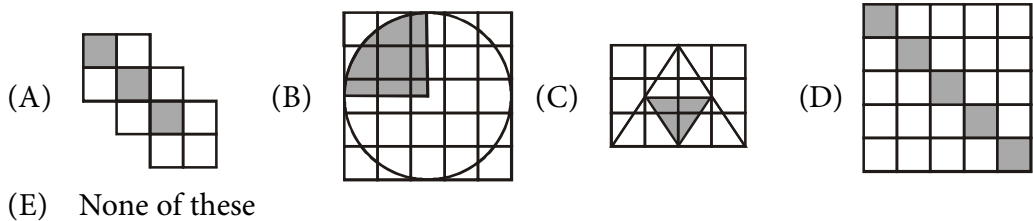
(E) None of these

**43.** What is the value of $\dfrac{10^{11} + 10^{10}}{10^{10}}$ ?
(A) 10      (B) $10^{21}$      (C) 11      (D) $2^5$
(E) None of these

**44.** The three scales below are shown balanced. If ● = 3, what are the values of D and ✱ ?

| ✱✱✱✱✱ | △△●● | | △△ | ✱●●● | | ✱✱✱●●● | △△△ |

(A) 7, 4                   (B) 4, 7
(C) 6, 5                   (D) 5, 6
(E) None of these

**45.** A watch reads 9 O'clock and its hour hand is pointing South-East. In what direction, the minute hand of the watch is at that time ?
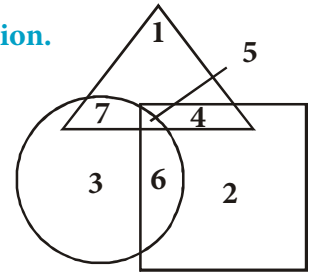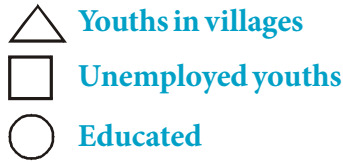(A) North-East           (B) East
(C) South               (D) South-West
(E) None of these

**46.** 3, ?, 15, 31, 63, 127
(A) 5      (B) 7      (C) 10      (D) 12
(E) None of these

47.  Seen through a mirror, the arms of a clock shows 8:50. What is the actual time?
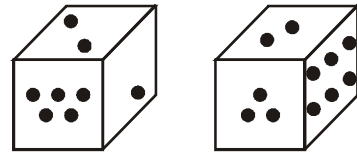(A)  3:10          (B)  3:15          (C)  9:45          (D)  10:15
(E)  None of these

48.  Study the diagram given carefully and answer the question.

△  Youths in villages

☐  Unemployed youths

○  Educated

Uneducated unemployed youths in villages are represented by _____.
(A)  5          (B)  4          (C)  6          (D)  7
(E)  None of these

49.  Two positions of a block are given below. When 1 is at the top, which number will be at the bottom?
(A)  3
(B)  6
(C)  2
(D)  1
(E)  None of these

50.  Ritu and Priti start from a fixed point. Ritu moves 5 km westward and turns left and then covers 6 km. Priti moves 7 km northward, turns left and walks 5 km. The distance between Ritu and Priti now is _____.
(A)  10 km          (B)  13 km          (C)  8 km          (D)  6 km
(E)  None of these

Note: The actual question paper will transclated in Hindi at the time of exam.