

Bihar STET Paper-I Memory Based- Maths

Q1. The value of k for which the lines $2x + ky + 7 = 0$ and $27x - 18y + 25 = 0$ are perpendicular to each other, is

- (a) $k = -1$
- (b) $k = 2$
- (c) $k = 3$
- (d) $k = -2$

Q2. The length of the portion of the straight line $3x + 4y = 12$ intercepted between the axis is

- (a) 4
- (b) 7
- (c) 5
- (d) 3

Q3. In ΔABC , a line through A cuts the side BC at D such that $BD : DC = 4 : 5$. If the area of $\Delta ABD = 60 \text{ cm}^2$ then the area of ΔADC is

- (a) 75 cm^2
- (b) 90 cm^2
- (c) 80 cm^2
- (d) 50 cm^2

Q4. A tangent is drawn to a circle of radius 6 cm from point situated at a distance of 10cm from the centre of the circle. The length of the tangent will be

- (a) 5 cm
- (b) 4 cm
- (c) 7 cm
- (d) 8 cm

Q5. PQR is an equilateral triangle. MN is drawn parallel to QR such that M is on PQ and N is on PR . If $PN = 6 \text{ cm}$, the length of MN is

- (a) 12 cm
- (b) 6 cm
- (c) 12 cm
- (d) 4.5 cm

Q6. The sides of a triangle are in the ratio $2 : 3 : 4$. The perimeter of the triangle is 18 cm. The area (in cm^2) of the triangle is:

- (a) 9
- (b) 36
- (c) $\sqrt{42}$
- (d) $3\sqrt{15}$

Q7. A cone and a hemisphere have equal bases and equal volume. Find the ratio of their heights?

- (a) $1 : 2$
- (b) $2 : 1$
- (c) $3 : 1$
- (d) $3 : 4$

Q8. If $\sqrt{1 + \frac{x}{9}} = \frac{13}{3}$, then the value of x is

- (a) $\frac{1439}{9}$
- (b) 169
- (c) 160
- (d) $\frac{1443}{9}$

Q9. If $x^2 + 9y^2 = 6xy$, then $x : y$ is

- (a) $1 : 3$
- (b) $3 : 2$
- (c) $3 : 1$
- (d) $2 : 3$

Q10. The perimeter of a semi-circle is 18 cm. Find the area of the same semi-circle (in cm^2).

- (a) 12.25
- (b) 25.50
- (c) 19.25
- (d) 16.64

Q11. The height of the equilateral triangle is 9 cm. What is the radius (in cm) of the circle circumscribing the three vertices?

- (a) 3
- (b) 6
- (c) 9
- (d) 12

Q12. If $\frac{2 \sin A}{1 + \cos A + \sin A} = K$, what is the value of $\frac{(1 - \cos A + \sin A)}{1 + \sin A}$

- (a) K
- (b) $\frac{K}{2}$
- (c) 2K
- (d) K^2

Q13. The value of $\sin\left(67\frac{1}{2}\right)^\circ \sin\left(22\frac{1}{2}\right)^\circ$ is equal to

- (a) $-2\sqrt{2}$
- (b) $2\sqrt{2}$
- (c) $\frac{1}{2\sqrt{2}}$
- (d) $\frac{-1}{2\sqrt{2}}$

Q14. If $a \cos \theta + b \sin \theta = 3$ and $a \sin \theta - b \cos \theta = 4$, then the value of $(a^2 + b^2)$ is:

- (a) 25
- (b) 16
- (c) 9
- (d) none of these

Q15. The mode of the data :

7, 4, 5, 8, 8, 4, 6, 8, 8, 8, 9, 10, 8 is:

- (a) 5
- (b) 9
- (c) 8
- (d) 10

Q16. The mean age of combined group of men and women is 30 years. If the means of the ages of men and women are respectively 32 and 27, then the percentage of women in the group is:

- (a) 40
- (b) 20
- (c) 25
- (d) 50

Q17. Find the mean proportion of 14.4 & 6.4

- (a) 8.7
- (b) 9.6
- (c) 6.6
- (d) 7.4

Q18. If mean of the following set is 5. Find the value of k

{2, 5, 6, 3, 8, k, 7}

- (a) 2
- (b) 4
- (c) 1
- (d) 3

Q19. The average of 25 students of class is 25kg when the weight of teacher is included, the average weight increases by 2 kg. Find the weight of teacher?

- (a) 77 kg
- (b) 82 kg
- (c) 75 kg
- (d) 79 kg

Q20. The average of 50 numbers is 40. The average of these 50 numbers and 5 others new number is 45. The average of the five new numbers is.

- (a) 85
- (b) 95
- (c) 75
- (d) 65

Q21. Find the median of 16, 12, 14, 18, 20.

- (a) 12
- (b) 16
- (c) 20
- (d) 10

Q22. The geometric mean of 4 and 9 is:

- (a) 4
- (b) 6
- (c) 3
- (d) 36

Solutions

S1. Ans.(c)
S2. Ans.(c)
S3. Ans.(a)
S4. Ans.(d)
S5. Ans.(b)
S6. Ans.(d)
S7. Ans.(b)
S8. Ans.(c)
S9. Ans.(c)
S10. Ans.(c)
S11. Ans.(b)

S12. Ans.(a)
S13. Ans.(c)
S14. Ans.(a)
S15. Ans.(c)
S16. Ans.(a)
S17. Ans.(b)
S18. Ans.(b)
S19. Ans.(a)
S20. Ans.(b)
S21. Ans.(b)
S22. Ans.(b)

