

Time: 3 Hours

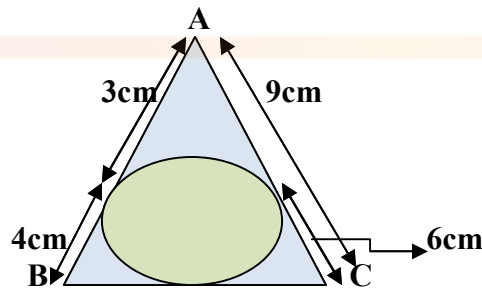
Max. Marks: 80

General Instructions:

1. All the questions are compulsory.
2. The question paper consists of 40 questions and it is divided into four sections A, B, C and D.
3. Section A comprises of 20 questions carrying 1 mark each.
4. Section B comprises of 6 questions carrying 2 marks each.
5. Section C comprises of 8 questions carrying 3 marks each.
6. Section D comprises of 6 questions carrying 4 marks each.
7. There is no overall choice. However, an internal choice has been provided
8. Please write down the Serial Number of the question before attempting it.

Section –A

1. The largest number which divides 70 and 125 leaving remainder 5 and 8 respectively.
(a) 11 (b) 13 (c) 17 (d) None of these
2. Mean of first eleven natural number is equal to:
(a) 7 (b) 6 (c) 5 (d) 5.5
3. Length of BC in the given figure is:



- (a) 7 cm (b) 10 cm (c) 12 cm (d) 15 cm
4. LCM of 3, 5 and 15 is:
(a) 45 (b) 30 (c) 15 (d) None of these
5. A die is thrown once, the probability of getting even prime number is:
(a) $\frac{1}{6}$ (b) 1 (c) 6 (d) $\frac{1}{2}$
6. If one zero of the polynomial $x^2 - kx + 1$ is 1 then value of K is :
(a) 1 (b) 2 (c) 3 (d) 4
7. Number 6^n can not end with: (where $n \in \mathbb{N}$)
(a) 6 (b) 5 (c) Cannot say (d) None of these
8. Product of a linear polynomial and a quadratic polynomial can have maximum number of zeroes is:
(a) 1 (b) 2 (c) 3 (d) 4

9. Write the coordinates of the mid points of the line joining the points (4, 7) and (2,-3).
 (a) (2,3) (b) (4,7) (c) (3,2) (d) (2,-3)
10. The distance of point (3, 4) from the origin is:
 (a) 5 units (b) 3 units (c) 4 units (d) 7 units
11. Coordinates of the mid points of the line segment joining the points (x_1, y_1) and (x_2, y_2) are -----
12. Line represented by equation $2x + 3y = 8$ intersects x- axis at -----

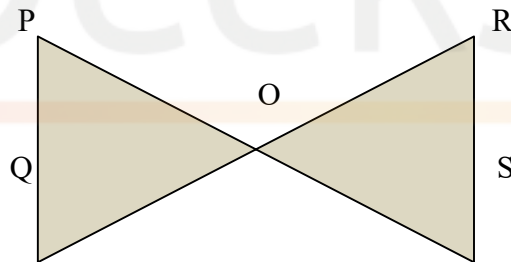
Or

- Graph of line $x + 4 = 0$ is parallel to -----.
13. Value of $\sec^2 \theta - \cot^2 \theta (90^\circ - \theta)$ is -----
14. $\sin^2 \theta + \cos^2 \theta = \operatorname{cosec}^2 \theta -$ -----
15. If $\Delta ABC \sim \Delta PQR$, then $\angle B =$ -----

16. Find the value of $\frac{\sec 41^\circ}{\operatorname{cosec} 49^\circ}$

Or

- Find the value of $\sin^2 20^\circ + \sin^2 70^\circ$
17. Radius of a wheel is 0.25 meter. Find the number of revolutions to cover the distance of 11 km by it.
18. A bag contains 6 red and 5 blue balls. Find the probability of getting blue ball. If the ball is taken out at random.
19. In figure if $PQ \parallel RS$, is $\Delta PQR \sim \Delta SOQ$, name the similarity.



20. Find the 20th term from the last of the A.P 3, 8, -----253.

Section - B

21. One card is randomly picked up from a pack of playing cards. What is the probability that the picked card is black in color?
22. The probability of winning of a game is $x/12$. If the probability of losing the game is $1/3$. Find the value of x .

Or

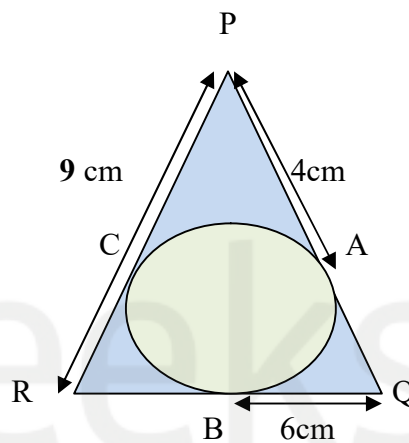
- Reema got Rs. 24000 as bonus for festivals. She donated rupees 5000, rupees 12000 she keeps for house hold expenditures and rupees 2000 to her son. And she gave rest amount to her daughter.
- a find the probability of house hold expenditure.
 b find the probability of the money received by the son.
23. The area of a circle is equal to the sum of the areas of two circles. If the radii of two circles are 24 cm and 7 cm. Find the diameter of the bigger circle.

24. Prove that $\sqrt{\frac{1+\sin\theta}{1-\sin\theta}} = \tan\theta + \sec\theta$

Or

Find the value of $\frac{\cos^2 20^\circ + \cos^2 70^\circ}{\sin^2 59^\circ + \sin^2 31^\circ}$

25. In the given figure $PA = 4\text{cm}$, $QB = 6\text{cm}$ and $RP = 9\text{cm}$. find the semi perimeter of ΔPQR .



26. If one of zeroes of polynomial $(k-1)x^2 + kx + 1$ is -3 then find the values of k .

Section – C

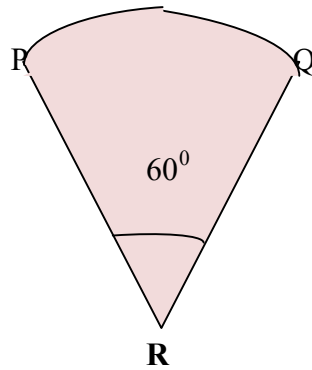
27. If ratio of the zeroes of polynomial $x^2 - kx + 6$ is $3:2$ then find the value of k .

28. Draw a line segment $PQ = 8\text{ cm}$. Take a point C on PQ such that $PC = \frac{1}{3} CQ$.

Or

Draw a circle of radius 3cm ; draw tangents to the circle, from a point 5cm away from the centre of the circle.

29. The given figure is sector of a circle of radius 10.5cm find the perimeter of the given figure.



30. Prove that : $\frac{\tan \theta}{1 - \cot \theta} + \frac{\cot \theta}{1 - \tan \theta} = 1 + \tan \theta + \cot \theta$

Or

If $\cos \theta + \sin \theta = \sqrt{2} \cos \theta$ then show that $\cos \theta - \sin \theta = \sqrt{2} \sin \theta$

31. Find the HCF of 4052 and 12576 by using Euclid Algorithm.

Or

Show that positive odd integers are of the form $4q + 1$ or $4q + 3$, where q is an integer.

32. Prove that the lengths of the tangents drawn on a circle from a point outside the circle are equal.

33. Find the ratio in which the Point $(-4, 6)$ divides the line segment by joining the points $A (-6, 10)$ and $B (3, -8)$.

34. Solve the following pairs of equations.

$$7x - 15y = 2$$

$$x + 2y = 3$$

Section – D

35. The age of a boy is double the age of his brother. After 4 years product of their ages will be 160. Find their present ages.

36. The sum of 5th and 9th terms of an A.P is 30. If 25th term is 3 times of its 8th term. Find the A.P.

Or

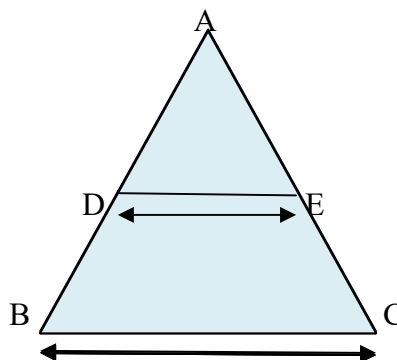
Sum and product of the third and seventh terms of an A.P, are 6 and 8 respectively, find the sum of the first 16 terms of the A.P.

37. The angle of elevation of the top a minar and angle of depression of the foot of the minar at the top of 7 meter high building are 60° and 30° respectively. Find the height of the minar.

38. State and prove Pythagoras theorem.

Or

In the given figure, $DE \parallel BC$, $DE = 3$ cm, $BC = 9$ cm and $\text{ar}(\triangle ADE) = 30\text{cm}^2$. Find the $\text{ar}(\text{BCED})$.



39. A tent is cylindrical up to 3m and after that its shape is conical, total height of the tent is 13.5m and radius of its base is 14m. Find the amount spent on the cloth required to make the tent at the rate of rupees 80 per square meter.

Or

Rain water on the roof of dimension $22\text{ m} \times 20\text{ m}$ was transferred into a cylindrical vessel of height 3.5m and diameter of 2m. If the vessel is filled up to the brim, how much cm rain happened?

40. Following data represent the marks obtained by the 100 students of a class.

Marks	Number of Students
0- 5	4
5 – 10	6
10 – 15	10
15 – 20	10
20 – 25	25
25 – 30	22
30 – 35	18
35 – 40	5

Draw both ogives for the data given above. Also find the median of the data with the help of the graph.