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Section A 1 Marks Each

1. The value of k for which x = 3, y = 2 is a solution of the equation x + ky = 5 is

   (A) 1 (B) 0 (C) – 1 (D)

2. With the help of a ruler and a compass ,it is possible to construct an angle of

   (A) 35 ° (B) 40° (C) 37.5° (D) 47.5°

3. ABCD is a cyclic quadrilateral in which AC and BD are its diagonals, if $\angle DBC = 55°$ and $\angle BAC = 45°$,then $\angle BCD =$

   (A) 60° (B) 70° (C) 80° (D) 75°

4. If the radius of a sphere is tripled, what is the ratio of the surface area of the first sphere to that of the second?

   (A) 1:3 (B) 3:1 (C) 1:9 (D) 9:1

5. The probability of drawing a red jack or red queen from a well shuffled pack of 52 cards is

   (A) $\frac{1}{26}$ (B) $\frac{1}{52}$ (C) $\frac{1}{13}$ (D) $\frac{2}{13}$

6. If a triangle and a rhombus are on same base and between same parellels. Then the ratio of area of triangle to that rhombus is

   (A) 1:2 (B) 2:1 (C) 1:4 (D) 4:1

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7. The condition that the equation ax + by + c = 0 does not represent a linear equation in two variables is

(A) $a \neq 0, b = 0$ (B) $a = 0, b \neq 0$ (C) $a = 0, b = 0$ (D) $a \neq 0, b \neq 0$

8. The height of a cone is 15 cm and volume is 1570cm^3, the diameter of the base is ($\pi = 3.14$)

(A) 20 (B) 10 (C) 40 (D) 5

Section B 2 Marks Each

9. the diameter of two cones are equal if their slant heights are in the ratio 5:4 find the ratio of their curved surface area

10. The number 42, 43, 44, 44. (2x+3) 45, 45, 46, 47 have been put in the ascending order if the median is 45, find x. hence find the mode of above data.

11. Parallelogram ABCD and rectangle ABEF have the same base AB and also have equal areas show that the perimeter of the parallelogram is greater than that of the rectangle.

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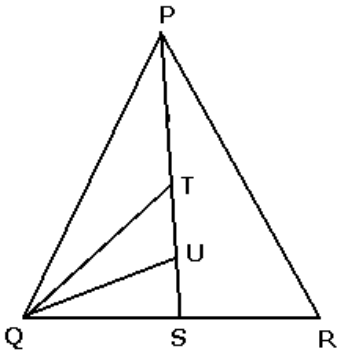
12. The diagonals of a quadrilateral ABCD are perpendicular show that the quadrilateral, formed by joining the mid-points of its side is rectangle.

OR

In figure PS in median of triangle PQR, E is mid point of side PS and U is the mid point of ST. show area of triangle TQU = $\frac{1}{8}$ area of triangle PQR



13. Find mean

x	10	20	30	40	50	60
f	7	8	5	8	6	6

14. Find the median of first 10 prime numbers.

Section C 3 Marks Each

15. Draw the graph of the equation 5x – y = 10. From the graph find the coordinates of the points where the line cuts cuts x axis and Y axis.

16. Write equation of a line passing through the points (3, 2)and (7, 3)

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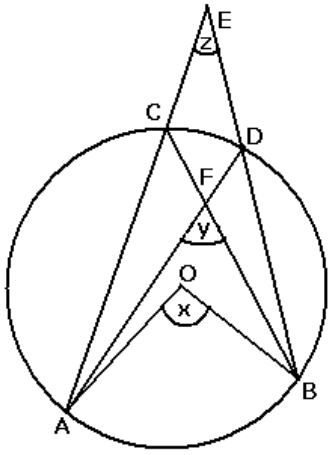
17. Prove that angles in the same segment of a circle are equal.

18. A heap of wheat is in the form of a cone whose diameter is 10.5 m and height 3 m finds its volume the heap is to covered by canvas as to protect it from rain find the area of the canvas as required.

19. Construct a triangle ABC in which base BC =5.9 cm, $\angle B=30°$ and difference between other two sides is 3 cm i.e. AB-CA=3cm.

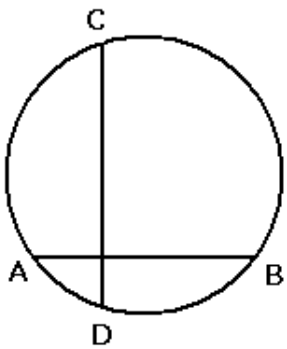
20. Two chords AB and CD of lengths 5 cm and 11 cm respectively of a circle are parallel to each other and are on opposite sides of its centre if the distance between AB and CD is 6 cm, find the radius of the circle

21. In figure $\angle AOB = x$, $\angle AFB = y$ and $\angle AEB = z$. Prove $x = y + z$



OR

If two chords AB and CD of a circle intersect at right angle, prove that arc CA + arc DB = arc AD + arc BC = semicircle.



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22. A solid right circular cylinder of radius 7 cm and height 38 cm is melted to make a cone of height 3 times that of cylinder find the curved surface area of the cone

23. Here is an extract from a mortality table. (i) Based on this information, what is the probability of a person 'aged 60' of dying within a year? (ii) What is the probability that a person 'aged 61' will live for 4 years?

Age	60	61	62	63	64	65
No. of Persons	1200	850	700	525	350	250

24. In an election seats won by various political parties are as follows:

Political Party	A	B	C	D	E	F
Seats Won	70	58	37	39	25	5

Which party won the minimum seats

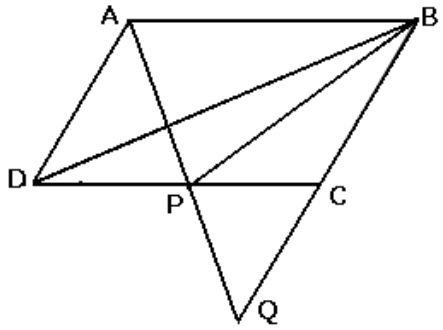
Section D 4 Marks Each

25. The cab fare in a city in as follows for the first km. the fare is Rs. 10 and for the successive distance it is Rs. 7 per km. Taking the total distance covered as x km. and total fare as Rs. Y Write a linear equation and draw its graph.

26. Give the geometric representations of $3x + 7 = 0$ as an equation
(i) in one variable
(ii) in two variables

27. Prove the angle subtended by an are at the centre is double the angle subtended by it at any point on the remaining part if the circle.

28. ABCD is a parallelogram in which BC is produced to Q such that CQ = BC. AQ intersects CD at P. If ar (DPB) = $4cm^2$, find the area of the parallelogram ABCD.



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29. ABCD is a trapezium in which AB ll DC, DC = 40 cm and AB = 50 cm. If X and Y are, respectively the mid-points of AD and BC, find $\frac{ar(DCYX)}{ar(XYBA)}$

30. Construct a triangle ABC in which angle B = 90°, angle C = 30° and perimeter of triangle ABC = 11cm

OR

An equilateral triangle if its altitude is 4.5 cm.

31. If 2 opposite sides of a cyclic quadrilaterl are equal prove its diagonals are equal.

32. The internal external diameters of a hollow hemispherical vessel are 24cm and 25cm respectively the cost to paint 1 cm^2 of the surface is Rs. 0.05 find the total cost to paint the vessel all over (use r= $\frac{22}{7}$)

33. A sweet shop placed an order for making cardboard boxes for packing their sweets. Two sizes of boxes were required. The bigger of dimensions 20 cm × 15 cm × 8 cm and the smaller of dimensions 15 cm × 8 cm × 5 cm. For all the overlaps, 10% of the total surface area is required extra. If the cost of the cardboard is Rs 5 for 1000 square cm, find the cost of cardboard required for supplying 500 boxes of each kind.

34. Draw a histogram to represent the following data.

CI	20-30	30-60	60-80	80-140	140-150
Frequency	5	18	6	60	8

OR

Draw a histogram to represent the following data.

CI	20-29	30-39	40-49	50-59	60-69
Frequency	3	12	8	20	7