

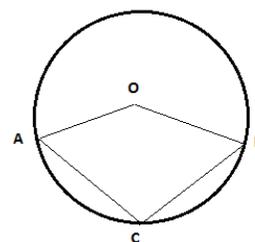
**General Instructions :-**

- All questions are compulsory.
  - The question paper is divided into four sections A , B , C and D. Section A comprises of 20 questions of one mark each, section B comprises of 6 questions of two marks each , section C comprises of 8 question of three marks each and section D comprises of 6 questions of four marks each.
  - There is no overall choice. However, internal choice has been provided in questions. You have to attempt only one of the alternatives in all such questions.
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**Section - A (1 X 20 = 20 mark)**

- 1) The decimal expansion of a rational number is  
(a) Terminating (b) Non terminating  
(c) Either terminating or non terminating repeating (d) Non Terminating non repeating
- 2)  $0.4\overline{7}$ , when represented in the form of  $\frac{p}{q}$  where p and q are integers and  $q \neq 0$ .  
(a)  $\frac{47}{90}$  (b)  $\frac{43}{90}$  (c)  $\frac{47}{99}$  (d)  $\frac{43}{99}$
- 3) Point P (4, 8) lie on the line  
(a) X axis (b) Y axis (c)  $y = 2x$  (d)  $x + y = 0$
- 4) The perpendicular distance of the point A(4,5) from Y axis is  
(a) 5 unit (b) 4 unit (c) -4 unit (d) 0 unit
- 5) If two interior angle on the same side of a transversal intersecting two parallel lines are in the ratio of 2:3 than measure of smaller angle is  
(a)  $64^\circ$  (b)  $72^\circ$  (c)  $108^\circ$  (d)  $96^\circ$
- 6) If p (E) denotes the probability of an events E then  
(a)  $P(E) < 0$  (b)  $P(E) > 1$  (c)  $0 \leq P(E) \leq 1$  (d)  $-1 \leq P(E) \leq 1$
- 7) If each edge of cube is increased by 20% then % increase in surface area will be  
(a) 50% (b) 45% (c) 20% (d) 44%
- 8) Mean of ten different numbers which are arranged in ascending order is 20, and then the mean of last 5 numbers will be  
(a) Less than 20 (b) Equal to 20 (c) More than 20 (d) Can't find if numbers are not given
- 9) The measure of the angles of a triangle are  $x + 35$ ,  $2x + 10$ , and  $3x - 15$ , then the given triangle is  
(a) Scalene triangle (b) Isosceles triangle (c) Equilateral triangle (d) None of these.

- 10) The diameter of a circle is 20 cm. A chord is 16 cm in length. The distance of chord from the centre of the circle is  
(a) 8 cm (b) 6 cm (c) 5 cm (d) 7 cm
- 11) Find remainder when  $(x^3 + x^2 - 2x - 3)$  is divided by  $(x - 1)$ .
- 12) Find  $P(-2)$ , if  $P(y) = 3y^3 + 2y^2 - 3y + 2$ .
- 13) In triangle ABC,  $AB = AC$  and angle bisector of  $\angle B$  and  $\angle C$  meet at P, if  $\angle A$  is  $70^\circ$  find angle  $\angle BPC$ .
- 14) The following observation have been organized in ascending order; 29, 32, 48, 52, x, x+3, 71, 75, 80, 92, if the median of the data is 60.5. Find the value of x.
- 15) Find the area of an equilateral triangle whose each side is 4 cm.
- 16) Probability of getting of three heads is 0.6, then probability of getting 3 tails is surely be 0.4 (T/F)
- 17) Find the value of  $\angle ACB$  if  $\angle AOB = 70^\circ$
- 18) Write the statement of RHS Congruence rule.
- 19) If the point (3, 4) lies on the graph of equation  $3y = ax + 7$ , Find the value of 'a'.
- 20) Write the equation of a line parallel to x-axis and distance from x-axis is 3 unit.



**Section B (2X6 = 12 marks)**

- 21) The angles of a quadrilateral are in the ratio of 3:5:9:13. Find each angles of the quadrilateral.
- 22) Construct a triangle ABC in which  $BC = 8\text{cm}$   $\angle B = 45^\circ$  and  $AB - AC = 3.5\text{ cm}$ . Step of construction not required.
- 23) Find the ratio of volume of two sphere whose ratio of radius is 2 : 3.
- 24) Three coins are tossed simultaneously 200 times with the following frequency of different outcomes:

Outcomes	3 Heads	2 Heads	1 Head	No. Head
Frequency	23	72	77	28

If the three coins are simultaneously tossed again compute the probability of

- (i) 3 Heads (ii) At least two heads
- 25) The Sides QR of a triangle PQR is produced to a point S. If the bisectors  $\angle PQR$  and  $\angle PRS$  meet at point T. The prove that  $\angle QTR = \frac{1}{2} \angle QPR$

OR

AD and BC are equal perpendiculars to a line segment AB, Show that CD bisects AB

26) Draw the graph of the linear equation  $x + y = 5$

**Section C ( 3 X 8 = 24 marks)**

27) The volume of cuboid is given by the polynomial  $p(x) = 8x^3 + 12x^2 - 2x - 3$ . Find possible expressions for dimension of the cuboid. Verify the result by taking  $x = 5$  units

OR

Factorise:  $x^3 + 13x^2 + 32x + 20$

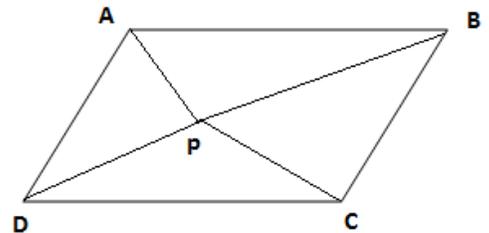
28) Find the quotient when  $f(x) = x^3 + 3x^2 + 3x + 5$  is divisible by  $(x+2)$ . Also find the remainder.

29) Draw the following points in the Cartesian plane :  $A(-2, 2)$  ,  $B( 5,2)$  ,  $C( 6, 4)$  ,  $D(-1, 4)$  .

Join AB, BC, CD, DA and find its area.

30) In figure P in point in the interior of the parallelogram ABCD Show that :

$$Ar ( APB) + Ar ( PCD) = \frac{1}{2} Ar(ABCD)$$



31) Find the area of shaded region, where ABC is a right angled triangle right angle at B

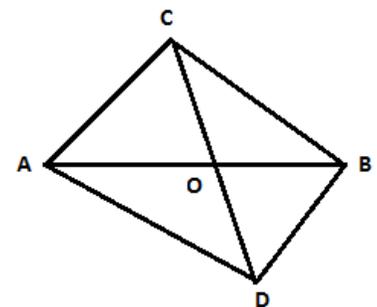
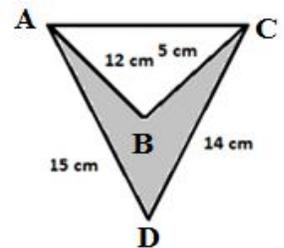
32) Represent  $\sqrt{6.5}$  geometrically. Write the approximate value by measuring.

33) In figure ABC and ABD are two triangle on same base AB. If line segment CD is bisected AB at O, Show that  $Ar( ABC) = Ar ( ABD)$

34) A conical tent is 10m high and radius of its base is 24m. Find

(i) Slant height of the tent

(ii) Cost of canvas required to make the tent, if the cost of 1  $m^2$  canvas is Rs. 70



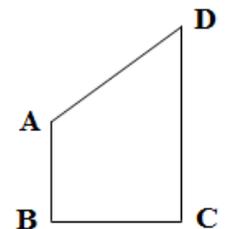
**Section D ( 6X4= 24 marks)**

35) AB and CD are respectively the smallest and the longest sides of a quadrilateral ABCD. Show that  $\angle A > \angle C$

36) State and prove mid point theorem.

37) Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.

OR



Prove that the quadrilateral formed, (if possible) by the internal angle bisector of any quadrilateral is cyclic.

- 38)** Construct a triangle ABC in which  $\angle B = 90^\circ$  and  $\angle C = 45^\circ$  and  $AB + BC + AC = 12$  cm.
- 39)** A right angle triangle with perpendicular sides 6cm and 8 cm, is revolved (i) about the side 6 cm and then (ii) about the side 8cm .Find the ratio of curved surface area in (i) case to (ii) case. Also find the ratio of their volumes.

**OR**

Three sphere of radius 3 cm, 4 cm and 5cm melted and recast into a solid sphere. find the radius of sphere.

- 40)** Draw histogram and then frequency polygon of the following data

class	0-10	10-20	20-30	30- 40	40-50	50- 60
frequency	8	12	10	6	9	5

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