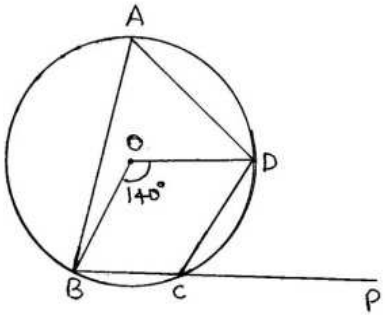
TM
ACCESS 2 SUCCESS
EDUCATIONAL SERVICES (Pvt. Ltd.)
H.O.:- 11, Shakti Vihar, Saraswati Vihar (Near Saral Diagonostics) Pitampura, New Delhi-34
B.O.:- 436, Rishi Nagar, Rani Bagh (Madhu Medicos wali Gali), New Delhi-34
B.O.:- 1971, Rani Bagh (Near Raja Park Red Light), New Delhi-34
B.O.:- 24, 3rd floor, Bannu Enclave (Near Pitampura club), New Delhi-34

M.

M. 80 **IX** TIME:- 3 Hours

SECTION-A (1 Mark Each)

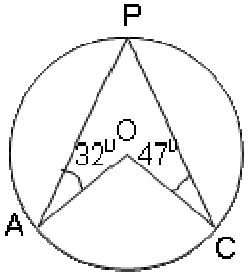
1. Any angle in the semicircle is (a) 90^0 (b) 180^0 (c) 270^0 (d) 360^0
2. Curved surface Area of cone is
   (a) $Лr^2$ (b) $2Лrl$ (c) $2Лrh$ (d) $Лrl$
3. CSA of solid hemisphere is
   (a)$2Лr^2$ (b) $4Лrl$ (c) $3Лr^2$ (d) $Лrl$
4. Median of 14, 15, 18,20,21,25 is
   (a)18(b)19 (c) 20 (d) 21
5. Find angle ∠BCD
   (a)140^0 (b) 110^0 (c) 70^0 (d) 60^0



6. The mean of 16 numbers is 8. If 2 is added to every number, what will be the new mean.
   (a) 14 (b) 12 (c) 10(d) 8
7. $1m^3$=? Liter (a) 10 (b) 100 (c) 1000(d) 10000
8. In a cyclic quadrilateral sum of opposite angles are? (a) 90^0 (b) 180^0 (c) 360^0(d) None of these
9. Slant height of cone is equal to (a) $Лrl$ (b) r^2+h^2 (c) r^2-h^2 (d) $\sqrt{r^2+h^2}$
10. Volume of cone = ...?.....Volume of cylinder (a) 1/2 (b) 1/3 (c) 1/4 (d) 1/5

SECTION-B (2 Marks Each)

11. Find the median of 19, 25, 60, 49, 36, 31, 30, 32, and 56, if 25 is replaced by 52, what will be the new median
12. In the figure, O is the centre of the circle. Calculate the magnitudes of ∠APC and ∠AOC.



13 A die is thrown 100 times, and the number of times each number turned up is recorded in the following table.

No. on the die	1	2	3	4
Frequency	15	55	16	14

Find the probability that the number turned up is a prime number.

14 Find the volume of the sphere whose surface area is 154 sq. cm.

15 The radius and height of a cone are in the ratio 4 : 3. The area of the base is 154 cm^2. Find the area of the curved surface.

16 Construct a triangle ABC in which $\angle B=75^0$, BC=5cm and AB =3cm

17. Find the value of a and b such that the following equations may have (3, -2) as a solution $5x + ay = 8$; $7x+by = 4b$

18 Find the value of k, if x=2,y=1 is a solution of the equation 2x+3y=k

OR

Draw the graph of the equation 2x + y = 4. From the graph, find the value of y when x = 2

SECTION-C (3 Marks Each)

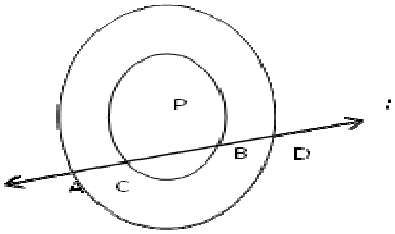
19 Write the four solutions for the equation 2x+y = 7

20 A bag contains 4 red, 5 green and 3 blue marbles. A marble is selected at random from the bag. Calculate the probability of getting (a) a red ball (b) a blue ball (c) not a blue ball.

OR

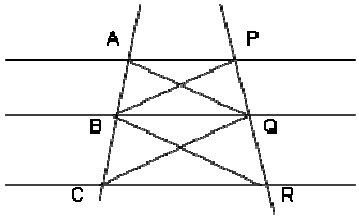
Construct a triangle with base of length 5cm, sum of two sides 7.7cm and one of the angles of the base as 45^0.

21 In the figure, *l* is a line which intersects two concentric circles with centre P at points A,C, D and B, Prove that AC = DB



22 In the following figure, AP||BQ||CR, Prove that ar(ΔAQC) = ar(ΔPBR)

23 Here is a linear equation that converts Fahrenheit to Celsius: $F= (\frac{9}{5}) C+32$



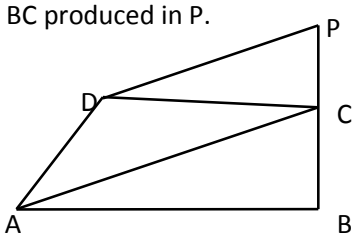
(I) Draw the graph of the linier equation above using Celsius for x-axis and Fahrenheit for y-axis

(II) If the temperature is 30^0 C, what is the temperature in Fahrenheit?

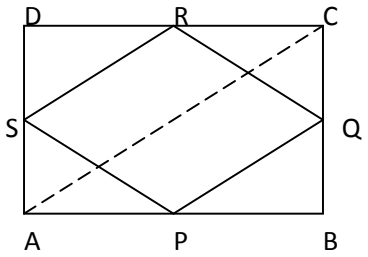
24 Find the missing frequency p for the following distribution whose mean is 7.68.

X	3	5	7	9	11	13
F	6	8	15	p	8	4

25 ABCD is a quadrilateral. A line through D parallel to AC meets BC produced in P. Prove that ar (ΔABP) = ar (quad ABCD)



26. Prove that the figure formed by joining the mid points of the pairs of consecutive sides of a rectangle is a rhombus



SECTION-D (4 Marks Each)

27 The taxi fare in a city is as follows: For the first kilometer the fare is Rs 8 and for the subsequent distance.it is Rs 5 per km .Taking the distance covered as x km and total fare as Rs y, write a linear equation for this information and draw its graph.

28 Construct a triangle ABC, in which $\angle A=30^0$, $\angle B=90^0$ and AB+BC+AC=13 cm

29 2000 families with 3 children were selected at random and the following data is recorded

Girl child in family	0	1	2	3
No. of families	475	814	111	600

Find.

a) probability of family having 0 girl

b) probability of family having 1 girl

c) probability of family having 2 girl

d) probability of family having more than 1 girl

e) probability of family at least 1 girl

30 Prove that the line segment joining the midpoint of the hypotenuse of a right angled triangle to the vertex of the right angle is half of the hypotenuse.

OR

Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on remaining part of the circle. Using this prove that the angle subtended by a minor arc in the alternate segment is obtuse. .

31. A storage tank consists of a circular cylinder with a hemisphere adjoined on either end. If the external diameter of the cylinder is 1.4 m. and its length is 5m. What will be the cost of painting it on the outside at the rate of Rs.10 per square metre?

OR

A solid cube of side 24 cm is cut into 27 cubes of equal volume. What will be the side of the new cube?

32 Represent the following data by means of a frequency polygon and Histogram

Marks	0-10	10-30	30-45	45-50	50-60
No. of students.	8	20	18	10	6

33 A bus stop is barricaded from the remaining part of the road, by using 50 hollow cones made of recycled cardboard. Each cone has a base diameter of 40 cm and height 1 m. If the outer side of each of the cones is to be painted and the cost of painting is Rs 12 per m2, what will be the cost of painting all these cones? (Use $\pi = 3.14$, and take $\sqrt{1.04}$ = 1.02)

34 Diagonals AC and BD of quadrilateral ABCD intersect at O such that OB = OD. If AB = CD, then show that:
(i) ar (DOC) = ar (AOB)
(ii) ar (DCB) = ar (ACB)
(iii) DA || CB or ABCD is a parallelogram.