SAGAR PUBLIC SCHOOL

SAMPLE PAPER-3

CLASS –IX

TIME ALLOWED : 3 HOURS **SUBJECT MATHS** **MAX. MARKS : 80**

General Instructions: Same as Sample Paper-1

1. π is

   (a) a rational number (b) an integer

   (c) an irrational number (d) a whole number

2. The linear equation $3x-5y=15$ has

   (a) no solution

   (b) infinitely many solution

   (c) a unique solution

   (d) two solutions

3. Two points having same abscissa but different ordinates lie on

   (a) y-axis (b) x-axis

   (c) a line parallel to y-axis

   (d) a line parallel to x-axis

4. To draw a histogram to represent the following frequency distribution:

Class interval	Frequency
5-10	6
10-15	12
15-25	10
25-45	8
45-75	15

   The adjusted frequency for the class 25-45 is

   (a) 6 (b) 5 (c) 2 (d) 3

5. The graph of the linear equation $2x+3y=6$ is a line which meets the x-axis at the point

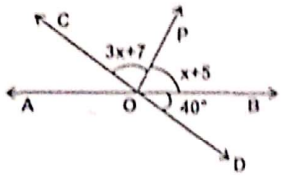
   (a) (0, 3) (b) (3, 0) (c) (2, 0) (d) (0, 2)

6. Euclid stated that all right angles are equal to each other in the form of

   (a) A postulate (b) A proof

   (c) An axiom (d) A definition

7. In the figure AB & CD are two straight lines intersecting at O, OP is ray. What is the measure of $\angle AOD$.



   (a) 128° (b) 40° (c) 140° (d) 100°

8. The diagonals AC and BD of a rectangle ABCD intersect each other at P. If $\angle ABD=50°$, then $\angle DPC=$

   (a) 70° (b) 80° (c) 90° (d) 100°

9. Zero of the zero polynomial is-

   (a) every real number (b) 1

   (c) not defined (d) 0

10. Express y in terms of x in the equation $5x-2y=7$.

    (a) $y=\frac{5x-7}{2}$ (b) $y=\frac{7-5x}{2}$

    (c) $y=\frac{7x+5}{2}$ (d) $y=\frac{5x+7}{2}$

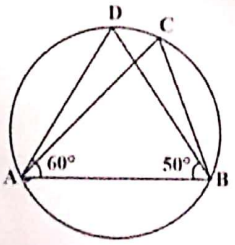
11. ABCD is a Rhombus such that $\angle ACB=40°$, then $\angle ADB$ is

    (a) 100° (b) 40° (c) 60° (d) 50°

12. Diagonals of a quadrilateral ABCD bisect each other. If $\angle=45°$, then $\angle B=$

    (a) 125° (b) 115° (c) 120° (d) 135°

13. In figure, if $\angle DAB=60°$, $\angle ABD=50°$, then $\angle ACB$ is equal to:



    (a) 80° (b) 60° (c) 50° (d) 70°

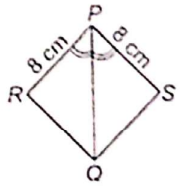
14. The simplest form of $0.5\overline{7}$ is

    (a) $\frac{26}{45}$ (b) $\frac{57}{99}$ (c) $\frac{57}{100}$ (d) $\frac{57}{90}$

15. Which of the following point does not lie on the line $y = 2x + 3$?

(a) (-5, -7) (b) (-1, 1) (c) (3, 9) (d) (3,7)

19. The congruence rule, by which the two triangles in the given figure are congruent is . _____.



(a) ASA (b) SAS (c) SSS (d) RHS

17. In a histogram, which of the following is proportional to the frequency of the corresponding class?

(a) Width of the rectangle

(b) Length of the rectangle

(c) Perimeter of the rectangle

(d) Area of the rectangle

18. The curved surface area of a cylinder and a cone is equal. If their base radius is same, then the ratio of the slant height of the height of the cylinder is

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

19. Assertion (A): The sides of a triangle are 3 cm, 4 cm and 5 cm. Its area is 6 cm^2.

Reason (R): If $2s = (a + b + c)$, where a, b, c are the sides of a triangle, then area $= \sqrt{(s-a)(s-b)(s-c)}$.

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R true but R is not the correct explanation of A.

(c) A is true but R is false.

(d) A is false but R is true.

20. Assertion (A): The point (1, 1) is the solution of $x + y = 2$.

Reason (R): Every point which satisfy the linear equation is a solution of the equation.

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

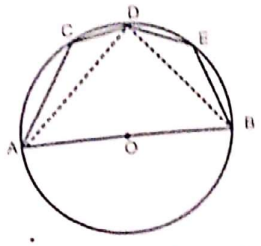
(c) A is true but R is false.

(d) A is false but R is true.

Section B

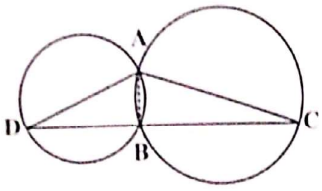
21. The base of an isosceles triangle measures 24 cm and its area is 192cm^2. Find its perimeter.

22. In given figure, AOB is a diameter of the circle and C, D, E are any three points on the semi-circle. Find the value of $\angle ACD + \angle BED$.



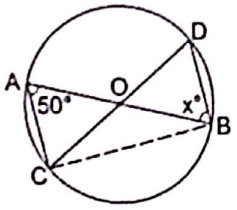
23. The outer diameter of a spherical shell is 10 cm and the inner diameter is 9 cm. Find the volume of the metal contained in the shell.

24. In the given figure, two circles intersect at two points A and B. AD and AC are diameters to the two circles. Prove that B lies on the line segment DC.



OR

If O is the centre of the circle, find the value of x in given figure:



25. Find whether the given equation has $x = 2, y = 1$ as a solution: $x + y + 4 = 0$.

OR

Find whether $(\sqrt{2}, 4\sqrt{2})$ is the solution of the equation $x - 2y = 4$ or not ?

Section - C

26. Give there rational numbers between $\frac{1}{3}$ and $\frac{1}{2}$.

27. Find the value of k, if x-1 is a factor of $(px)^2$ case: $p(x) = 2x^2 + kx + \sqrt{2}$

28. From a point in the interior of an equilateral triangle, perpendiculars are drawn on the three sides. The lengths of the perpendiculars are 14 cm, 10 cm and 6 cm. Find the area of the triangle.

OR

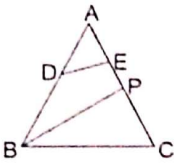
The triangular side walls of a flyover have used for advertisements. The sides of the walls are 13 m, 14 m and 15 m. The advertisement yield an earning of Rs 2000 per m^2 a year. A company hired one of its walls for 6 months. How much rent did it pay?

29. Find solutions of the form $x = a$, $y = 0$ and $x = 0$, $y = b$ for the following pairs of equations. Do they have any common such solution?

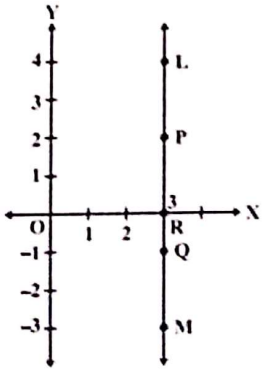
30. Show that the quadrilateral formed by joining the mid-points the sides of a rhombus, taken in order, form a rectangle.

OR

In figure D is mid-Point of AB. P is on AC such that $PC = \frac{1}{2}AP$ and $DE \| BP$, then show that $AE = \frac{1}{2}AC$.



31. In Figure, LM is a line parallel to the y-axis at a distance of 3 units.



(i) What are the coordinates of the points P, R and Q?

(ii) What is the difference between the abscissa of the points L and M?

Section D

32. Find the values of a and b if $\frac{7+3\sqrt{5}}{3+\sqrt{5}} - \frac{7-3\sqrt{5}}{3-\sqrt{5}} = a + b\sqrt{5}$.

OR

If $p = \frac{3-\sqrt{5}}{3+\sqrt{5}}$ and $q = \frac{3+\sqrt{5}}{3+\sqrt{5}}$, find the value of $p^2 + a^2$.

33. In the adjoining figure, name:

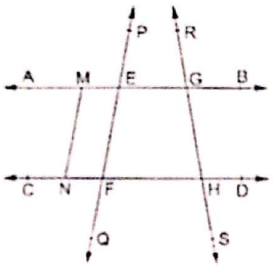
(i) Six points

(ii) Five line segments

(iii) Four rays

(iv) Four lines

(v) Four collinear points



34. In the given figure, PQRS is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.

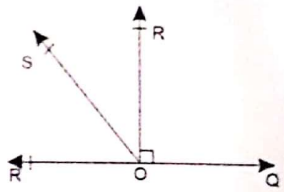
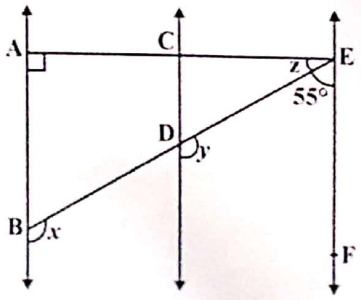


Fig., $AB \| CD$ and $CD \| EF$. Also, $EA \perp AB$. If $EA \perp AB$. $\angle BEF = 55°$, find the values of x, y and z.



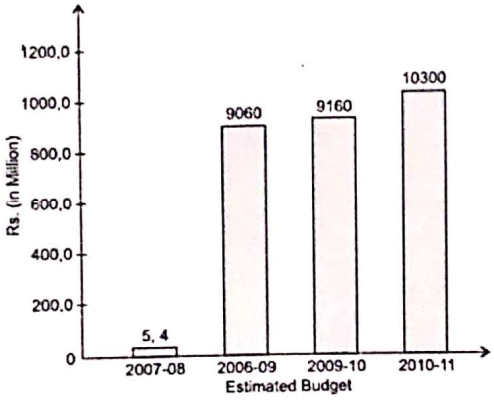
35. Find the values of a and b so that the polynomial $(x^4+ax^3-7x^2-8x+b)$ is exactly divisible by $(x+2)$ as well as $(x+3)$.

Section - E

36. Read the following text carefully and answer the question that follow:

Ladli Scheme was launched by the Delhi Government in the year 2008. This scheme helps to make women strong and will empower a girl child. This scheme was started in 2008.

The expenses for the scheme are plotted in the following bar chart.



(i) What are the total expenses from 2009 to 2011 ?

(ii) What is the percentage of no of expenses in 2009-10 over the expenses in 2010-11 ?

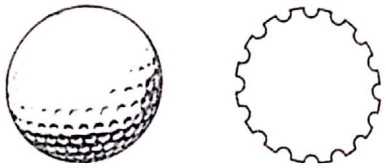
(iii) What is the percentage of minimum expenses over the maximum in the period 2007-2011?

OR

What is the difference of expenses in 2010-11 and the expenses in 2006-09?

37. Read the following text carefully and answer the questions that follow:

A golf ball is spherical with about 300-50 dimples that help increase its velocity while in play. Golf balls are surface has 315 dimples (hemi-spherical) of radius 2 mm.



(i) Find the surface area of one such dimple

(ii) Find the volume of the material dug out to make one dimple.

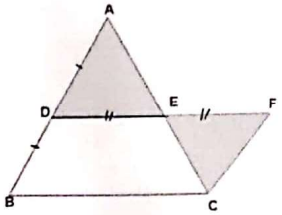
(iii) Find the total surface area exposed to the surroundings.

OR

Find the volume of the golf ball.

38. Read the following text carefully and answer the questions that follow:

Harish and Deep were trying to prove a theorem. For this they did the following



(i) Draw a triangle ABC

(ii) D and E are found as the mid points of AB and AC

(iii) DE was joined and DE was extended to F so $DE = EF$

(iv) FC was joined.

Questions:

(i) ΔADE and ΔEFC are congruent by which criteria ?

(ii) Show that $CF \parallel AB$.

(iii) Show that $CF = BD$.

OR

Show that $DF = BC$ and $DF \parallel BC$.