

PRACTICE PAPER - 2019-2020

Class – X

Subject – Maths (Basic)

Time Allowed : 3 Hrs.

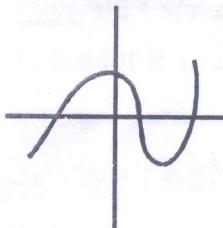
Maximum Marks : 80

SECTION - A

Q.1 For some integer m , every even integer is of the form : (20x1 = 20)

- (a) m (b) $m+1$ (c) $2m$ (d) $2m + 1$

Q.2 The graph of $y = p(x)$ are given below for polynomial $p(x)$. the number of zeroes.



- (a) 0 (b) 1 (c) 4 (d) 3

Q.3 For quadratic equation $ax^2 + bx + c = 0$ Discriminant D ?

- (a) $b^2 - 4ac$ (b) $a^2 - 4bc$ (c) $4ab$ (d) $\frac{2a}{b}$

Q.4 The 10th term of an AP : -2, 7, 12 is.

- (a) 27 (b) 47 (c) 13 (d) -47

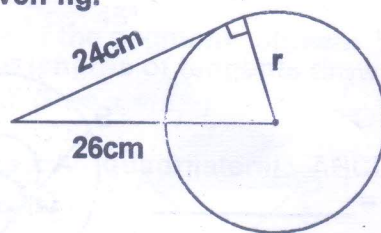
Q.5 Distance of the point $P(2,0)$ from the origin is -

- (a) -2 (b) 5 (c) 2 (d) 0

Q.6 In $\triangle ABC$, $AB = 6\sqrt{3}$ cm, $AC = 12$ cm and $BC = 6$ cm. The angle B is

- (a) 60° (b) 30° (c) 90° (d) 45°

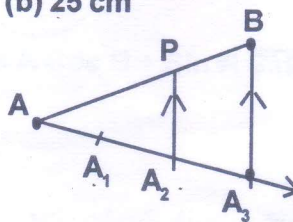
Q.7 Find r in given fig.



- (a) 10 cm (b) 25 cm (c) 9 cm (d) 28 cm

Q.8 In given figure :

$$AA_1 = A_1A_2 = A_2A_3$$



The value of $AP : PB$ is

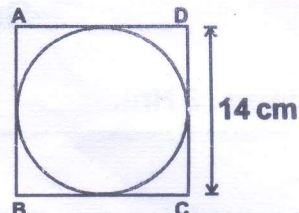
- (a) 2 : 1 (b) 1 : 1 (c) 1 : 2 (d) 3 : 2

(P.T.O.)

Q.9 If $\sin A = \cos A$ and $0^\circ < A < 60^\circ$ the value of A is

- (a) 45° (b) 60° (c) 90° (d) 10°

Q.10 Area of circle in given figure if ABCD is a square.



- (a) $50 \pi \text{ cm}^2$ (b) $49 \pi \text{ cm}^2$ (c) $51 \pi \text{ cm}^2$ (d) 49 cm^2

Q.11 One rational number between $\sqrt{2}$ and $\sqrt{3}$

Q.12 If α and β are the zeroes of polynomial $p(x) = 2y^2 + 7y + 5$, then $\alpha + \beta =$ _____

Q.13 For what value of K, the following system of equations :

$$Kx + 2y = 3$$

$$3x + 6y = 10$$

has a unique solution :

- (a) $k \neq 1$ (b) $k = 1$ (c) $k \neq 2$ (d) $k = 2$

Q.14 If $x = 3$ is one root of the equation $x^2 - 2kx - 6 = 0$. then the value of k

- (a) $\frac{1}{2}$ (b) 2 (c) $\frac{1}{3}$ (d) $\frac{4}{5}$

Q.15 In an AP, $a_{21} - a_7 = 84$, then d =

- (a) 6 (b) 7 (c) 3 (d) 5

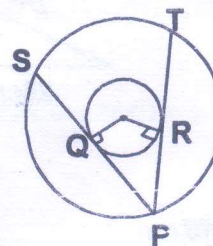
Q.16 If C is the mid point of AB, then coordinate of C _____.

- A. _____ B
(3,4) (3,-4)

Q.17 Given $\Delta ABC \sim \Delta PQR$, if $\frac{AB}{PQ} = \frac{1}{3}$

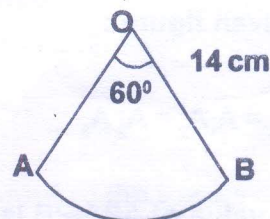
then $\frac{\text{ar}(\Delta ABC)}{\text{ar}(\Delta PQR)} =$ _____

Q.18 In given figure, if $RT = 5 \text{ cm}$ then $PS =$ _____



Q.19 The value of $(\sin^2 33^\circ + \sin^2 57^\circ)$ is

Q.20 Area of sector OAB is

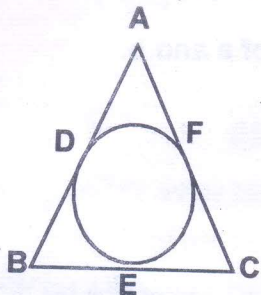


SECTION - B

Q.21 Find the value of $\sin 60$ geometrically.

(6x2 = 12)

Q.22 In given figure, if $AB = AC$, Prove that $BE = EC$



Q.23 Find the value of k for which the points $(-5,1)$, $(1, k)$ and $(4, -2)$ are collinear.

Q.24 Solve for x and y

$$x + 2y - 3 = 0$$

$$3x - 2y + 7 = 0$$

Q.25 Solve for x

$$\frac{x+3}{x+2} = \frac{3x-7}{2x-3}, \quad x \neq -2, \frac{3}{2}$$

Q.26 The first and last term of an AP are 7 and 49 respectively. If sum of all its terms is 420. Find its common difference.

SECTION - C

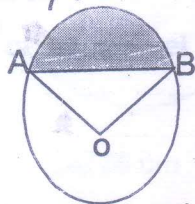
(8x3 = 24)

Q.27 State and prove BPT.

OR

State and prove pythagoras theorem.

Q.28 Find the area of the segment shown in fig, if radius of the circle is 21cm and $\angle AOB = 120^\circ$ (Use $\pi = \frac{22}{7}$)



Q.29 Given that $\cos(A-B) = \cos A \cos B + \sin A \sin B$ Find the value of $\cos 15^\circ$ if

$$A = 45^\circ \quad B = 30^\circ$$

Or

Solve for θ :

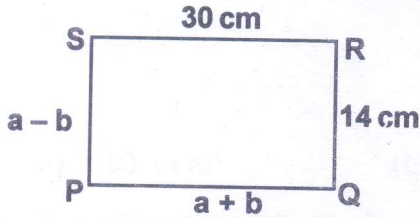
$$\frac{\cos^2 \theta}{\cot^2 \theta - \cos^2 \theta} = 3$$

(P.T.O.)

Q.30 Draw a circle of radius 8 cm. From a point 12 cm away from its centre. Construct the pair of the tangents to the circle and measure the length.

Q.31 Prove that $\sqrt{5}$ is a irrational number.

Q.32 In figure PQRS is a rectangle. Find value of a and b.



Q.33 Show that $\frac{1}{2}$ and $-\frac{3}{2}$ are the zeroes of the polynomial $4x^2 + 4x - 3$ and verify the relationship between zeroes and coefficients of polynomials.

Q.34 Find the number of terms of the AP $18, 15\frac{1}{2}, 13, \dots, (-49\frac{1}{2})$ and find the sum of all its terms.

SECTION-D

(6x4 = 24)

Q.35 The sum of two numbers is 9 and sum of their reciprocal is $\frac{1}{2}$. Find the numbers.

Q.36 In what ratio does the point P (-4, 6) divide the line segment joining the points A (-6, 10) and B(3, -8) ?

Or

Prove that the points (3,0), (6, 4) and (-1, 3) are the vertices of right angled isosceles triangle and find area of triangle.

Q.37 Prove that the ratio of the areas of two similar triangles are equal to the ratio of the square of their corresponding sides.

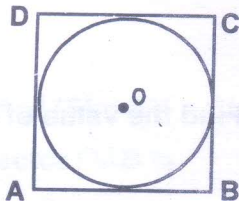
Q.38 Evaluate :

$$\frac{4 \cot^2 60^\circ + \sec^2 30^\circ - 2 \sin^2 45^\circ}{\sin^2 60^\circ + \cos^2 45^\circ}$$

Q.39 Prove that the lengths of tangents drawn from an external point to a circle are equal.

Or

In given figure : A quadrilateral ABCD is drawn to circumscribe a circle prove $AB + CD = AD + BC$



Q.40 The angle of elevation of the top of a building from the foot of the tower is 30° and the angle of elevation of the top of the tower from the foot of the building is 60° . If the tower is 60m high. Find the height of the building.
