Sample Paper 1

Section A (Each sum carry 1 mark)

1. Choose the correct option:

i) If a and b are two numbers then HCF × LCM =

$a)$ $a+b$ $b)$ 1 $c)$ $a \times b$ $d)$ $a-b$

ii) The graph of a quadratic polynomial is.....

$a)$ Straight Line $b)$ Parabola $c)$ Curve $d)$ Origin

iii) If $p(x) = ax^2 + bx + c$, is a quadratic poly then sum of zeroes

$a)$ $-\frac{c}{a}$ $b)\frac{b}{a}$ $c)$ $\frac{c}{a}$ $d)-\frac{b}{a}$

iv) The equations $a_1x + b_1y + c_1 = 0, a_2x + b_2y + c_2 = 0$ have a unique sol if

$a)$ $\frac{a_1}{a_2} = \frac{b_1}{b_2}$ $b)$ $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ $c)\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ $d)\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

v) Which of the following is not a quadratic equation?

$a)$ $2x^2 - x + 3 = 0$ $b)$ $x(x+1) = 2x$

$c)$ $4x^2 + 1 = \frac{1}{x}$ $d)$ $x + \frac{1}{x} = 5$

vi) Which of the following is not an AP?

$a)$ $5, 9, 13, \ldots\ldots$ $b)$ $5, 1, -3, \ldots\ldots$

$c)$ $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \ldots\ldots$ $d)$ $2, 2, 2 \ldots..$

vii) In given figure, In ΔABC, $DE \| BC$ then $x =$

$a)$ 1 $b)$ 2 $c)$ 1.5 $d)$ 4

viii) $sin45° =$

$a)$ $\sqrt{2}$ $b)$ $\frac{1}{2}$ $c)$ 1 $d)$ $\frac{1}{\sqrt{2}}$

ix) $tan\theta = \frac{sin\theta}{\ldots\ldots}$

$a)$ $cos\theta$ $b)$ $cot\theta$ $c)$ $sec\theta$ $d)$ 1

x) The common point of a circle and tangent is

$a)$ Center $b)$ Point of contact $c)$ External point $d)$ none

xi) The area of a quadrant of circle =

$a)\ \pi\left(\frac{r}{4}\right)^2$ $b)\ \pi r^2$ $c)\ \frac{\pi r^2}{2}$ $d)\ \frac{\pi r^2}{4}$

xii) The area of base of cylinder with diameter r cm:

$a)\ \pi r^2$ $b)\ \frac{\pi r^2}{4}$ $c)\ \frac{\pi r^2}{2}$ $d)\ 2\pi r^2$

xiii) The height of sphere of radius 14cm is:

$a)$ 14 cm $b)$ 7 cm $c)$ 28 cm $d)$ 21 cm

xiv) Which of the following is not measure of central tendency?

$a)$ Mean $b)$ Class interval $c)$ MOde $d)$ Median

xv) Which of the following can not be probability of an event?

$a)\ \frac{2}{3}$ $b)$ 5% $c)$ 1.4 $d)$ 0

xvi) The probability of a certain event is...

$a)$ 0 $b)$ 1 $c)\ -1$ $d)\ \frac{1}{2}$

2. Choose True/False:

i) $2+\sqrt{3}$ is an irrational number.

ii) The graph of linear equation in two variables is a parabola.

iii) In a quadratic equation if $D=0$ then it has equal roots.

iv) The distance of point $(3,4)$ from origin is 5 units.

v) For every value of θ, value of $tan\theta$ is less than 1.

vi) A circle has only one tangent.

vii) The mode of $6,5,4,3,4,2,4,7$ is 7

3. Fill in the blanks:

i) The equations $2x+3y=5, 4x+6y=10$ have .....sol.

ii) The common difference of AP $4,1,-2,\ldots\ldots$ is... ...

iii) If $\Delta ABC \sim \Delta QPR$ then $\angle B = \cdots ..$

iv) The mid point of line segment joining points (x_1,y_1) and (x_2,y_2) is.....

v) The length of arc of sector $=$ _____ $\times \frac{\theta}{360°}$

vi) Volume of cylinder is _____

vii) If the probability of winning a match is 0.58 then the probability of losing the match is.....

Section B (Each sum carry 2 marks)

4. Find HCF and LCM of 96 and 404 by prime factorization.

5. Form a quadratic polynomial whose sum and product of zeroes are 5 and 8 respectively.

6. The length of a minute hand of clock is 14cm. Find the area swept by the hand in 5 minutes.

7. A die is thrown once. Find the probability of getting number greater than 4.

Section C (Each sum carry 4 marks)

8. Check whether the equation $6x^2 - x - 2 = 0$ has real roots or not. If so then find roots.

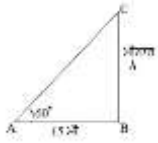
9. How many terms are there in AP 7,13,19, ... .205 AP ? **OR**
The fifth term of an AP is 17 and ninth term is 33. Find the sum of first 15 terms.

10. Find the coordinates of point which divides the line segment joining the points $(-3,4)$ and $(2,5)$ in $2:3$. **OR**
Find a point on x–axis which is equidistant from $(3,4)$ and $(2,3)$.

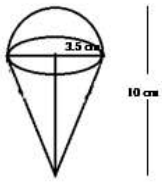
11. If $\tan A = \frac{4}{3}$ then find other T ratios of $\angle A$

OR Prove that $\frac{\cos A}{1+\sin A} + \frac{1+\sin A}{\cos A} = 2\sec A$

12. A tower stands vertically on the ground. From a point 15m away from the base of the tower, the angle of elevation of top of the tower is 60^0. Find i) height of the tower ii) Distance of the point from base of tower.



13. Rasid got a latu on his birthday which is in the shape of a cone surmounted by a hemisphere.



The total height is 10cm and diameter is 7cm. Find (i) height of cone (ii) volume of latu.

Section D (Each sum carry 6 marks)

14. Check whether the equations $5x + 8y = 9, 2x + 3y = 4$ have a unique solution or not, if so then solve **OR**

The sum of a two digit number and the number obtained by reversing its digits is 110. If unit place digit is subtracted from tens place digit then result is 6. Find the number.

15. State and Prove Thales Theorem **OR**

Prove that the tangents drawn from an external point are equal in length.

16. Find the mean of the following:

Class	15 – 20	20 – 25	25 – 30	30– 35	35-40	40-45	45-50	50-55
F	3	8	9	10	3	0	0	2

OR

Find the mode of the following

Weight	40-45	45-50	50-55	55-60	60-65	65-70	70-75
F	2	3	8	6	6	3	2