NAME : _____   SUBJECT : MATHEMATICS
DATE : _____   CLASS   : XI
MARKS : 25

I CHOOSE THE BEST ANSWER   (5x1=5)

1. If n is a natural number then n is
(A) always a natural number. (B) always an irrational number.
(C) always a rational number (D) may be rational or irrational
2. Which of the following is not true?.
(A) Every rational number is a real number. (B) Every integer is a rational number.
(C) Every real number is an irrational number. (D) Every natural number is a whole number.
3. Which one of the following, regarding sum of two irrational numbers, is true?
(A) always an irrational number. (B) may be a rational or irrational number.
(C) always a rational number. (D) always an integer.
4. $\sqrt{27} + \sqrt{12}=$
(A) $\sqrt{39}$ (B) $5\sqrt{6}$ (C) $5\sqrt{3}$ (D) $3\sqrt{5}$
5. $4\sqrt{7} \times 2\sqrt{3}=$
(A) $6\sqrt{10}$ (B) $8\sqrt{21}$ (C) $8\sqrt{10}$ (D) $6\sqrt{21}$

II FILL IN THE BLANKS WITH APPROPRIATE SYMBOL $\in$ or $\notin$ (5x1=5)

Consider the set A = {Ashwin, Murali Vijay, Vijay Shankar, Badrinath }.
(i) Murali Vijay _____ A.
(ii) Ashwin _____ A.
(iii) Badrinath _____A.
(iv) Ganguly _____ A.
(v) Tendulkar _____ A

III State whether True or False: (6x1=6)
Consider the following sets A = {0, 3, 5, 8}, B = {2, 4, 6, 10} and C = {12, 14,18, 20}.
(i) $18 \in C$
(ii) $6 \notin A$
(iii) $14 \notin C$
(iv) $10 \in B$
(v) $5 \in B$
(vi) $0 \in B$

IV MATCH THE FOLLOWING: (5x1=5)
1. $\sqrt{8}$ -   cubic polynomial
2. $z^3 {}^- z^2 +3$ -   constant polynomial
3. $\sqrt{7}$ -   quadratic polynomial
4. $y^2 - \sqrt{8}$ -   linear polynomial
5. $\sqrt[3]{4}z+7$ - $2\sqrt{2}$

V ANSWER ANY 2:   (2x2=4)
1. Express 32 in the form of 2^n
2.multiply $\sqrt[3]{40}$ and $\sqrt[3]{16}$
3.Write the following numbers in decimal form:
(i) 3.459×10^6
(ii) 5.678×10^4

NAME : _____   SUBJECT :MATHEMATICS
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I CHOOSE THE BEST ANSWER   **(15x1=15)**

1. The exterior angle of a triangle is equal to the sum of two
(A) Exterior angles   (B) Interior opposite angles   (C) Alternate angles   (D) Interior angles

2.Degree of the constant polynomial is _____
(A) 3   (B) 2   (C) 1   (D) 0

3.The interior angle made by the side in a parallelogram is 90° then the parallelogram is a
(A) rhombus   (B) rectangle   (C) trapezium   (D) kite

4. If the y-coordinate of a point is zero, then the point always lies _____
(A)in the I quadrant   (B) in the II quadrant   (C)on x-axis   (D) on y-axis

5. If (x+2, 4) = (5, y–2), then the coordinates (x,y) are _____
(A) (7, 12)   (B) (6, 3)   (C) (3, 6)   (D) (2, 1)

6. On plotting the points O(0,0), A(3, – 4), B(3, 4) and C(0, 4) and joining OA, AB, BC
and CO, which of the following figure is obtained?
(A) Square   (B) Rectangle   (C) Trapezium   (D) Rhombus

7. The semi-perimeter of a triangle having sides 15 cm, 20 cm and 25 cm is
(A) 60 cm   (B) 45 cm   (C) 30 cm   (D) 15 cm

8. The point whose ordinate is 4 and which lies on the y-axis is _____
(A)(4, 0)   (B) (0, 4)   (C) (1, 4)   (D) (4, 2)

9. The distance between the two points (2, 3) and (1, 4) is _____
(A) 2   (B) 56   (C) 10   (D) $\sqrt{2}$

10. If the points A (2,0), B (-6,0), C (3, a–3) lie on the x-axis then the value of a is _____
(A) 0   (B) 2   (C) 3   (D) –6

11.In what ratio does the y-axis divides the line joining the points (−5,1) and (2,3)
internally
(A) 1:3   (B) 2:5   (C) 3:1   (D) 5:2

12. If (1,−2), (3,6), (x,10) and (3,2) are the vertices of the parallelogram taken in order,
then the value of x is
(A) 6   (B) 5   (C) 4   (D) 3

13.Which of the following is a solution of the equation 2x-y=6
(A) (2,4)   (B) (4,2)   (C) (3, −1)   (D) (0,6)

14. If (2,3) is a solution of linear equation $2x+3y = k$ then, the value of k is
(A) 12   (B) 6   (C) 0   (D) 13

15.GCD of any two prime numbers is _____
(A) −1   (B) 0   (C) 1   (D) 2

II ANSWER ANY 10 QUESTIONS   (10x2=20)

1.Find the value of the polynomial $f(y) = 6y – 3y^2 + 3$ at $y = 1$
2.If $p(x) = x^2 – 2\sqrt{2}x + 1$, find $p(2\sqrt{2})$.
3.Find the roots of the polynomial equation : $x + 3 = 0$.
4.Find the GCD for $(2x + 5)$, $(5x + 2)$
5.Expand: $(3a – 4b)^3$
6.(i) Prove that (x-1) ia a factor of x^3-7x^2-7
7.Find the volume of cube whose side is 10 cm.
8.Find the Total Surface Area and Lateral Surface Area of the cube, whose side is 5 cm.
9.A cube has the Total Surface Area of 486 cm2. Find its lateral surface area.
10.Write the following numbers in decimal form:
    (i) 6.34×10^4 (ii) 2.00367×10^{-5}
11.Find the distance between the points
    (–4, 3), (2,–3).

III ANSWER ANY 3 QUESTIONS   (3x5=15)

1.Find the area of an equilateral triangle whose perimeter is 180 cm.
2.Find the Total Surface Area and the Lateral Surface Area of a cuboid whose dimensions are
length = 20 cm, breadth = 15 cm, height = 8 cm.
3.The dimensions of a cuboidal box are 6 m x 400 cm x 1.5 m. Find the cost of painting its entire outer surface at the rate of Rs 22 per m².
4.The centre of a circle is (-4, 2). If one end of the diameter of the circle is (-3, 7) then find the other end.