REVISION TEST - 1

CLASS: X **MATHEMATICS** **MARKS: 100**

<u>I. Choose the correct Answer:</u> 14x1=14

1. If $n(A \times B)=6$ and $A=\{1,3\}$ then $n(B)$ is

a)1 b)2 c)3 d)6

2. If the HCF of 65 and 117 is expressible in the form of $65m - 117$, then the value of m is

a)4 b)2 c)1 d)3

3. The next sequence $\frac{3}{16}, \frac{1}{8}, \frac{1}{12}, \frac{1}{18}$ ___ is

a) $\frac{1}{24}$ b) $\frac{1}{27}$ c) $\frac{2}{3}$ d) $\frac{1}{8}$

4. The range of the relation $R=\{(x, x^2)/x$ is a prime number less than 13$\}$ is

a) $\{2,3,5,7\}$ b) $\{2,3,5,7,4\}$ c) $\{4,9,25,49,121\}$ d) $\{1,4,9,25,49,121\}$

5. Using Euclid's division lemma if the cube of any positive integer is divided by 9 then the possible remainders are

a) 0,1,8 b) 1,4,8 c) 0,1,3 d) 1,3,5

6. Given $F_1=1$, $F_2=3$ and $F_n= F_{n-1} + F_{n-2}$ then F_5 is

a) 3 b) 5 c) 8 d) 11

7. The solution of the system $x+y-3z=-6$, $-7y+7z=7$, $3z=9$ is

a) x=1,y=2,z=3 b) x=-1,y=2,z=3 c) x=-1,y=-2,z=3 d) x=1,y=-2,z=3

8. $\frac{3y-3}{y} \div \frac{7y-7}{3y^2}$ is

a) $\frac{9y}{7}$ b) $\frac{9y^3}{(21y-21)}$ c) $\frac{21y^2-42y+21}{3y^2}$ d) $\frac{y^2-2y+1}{y^2}$

9. Graph of a linear equation in a

a) Straight line b) Circle c) Parabola d) Hyperbola

10. A system of three linear equation in three variables in inconsistent if their plane

a) intersect only at a point b) intersect in a line
c) coincides with each other d) do not intersect

11. The roots of quadratic equation $x^2-x-1=0$ are

a) 1,1 b) -1,1 c) $\frac{1+\sqrt{5}}{2}, \frac{1-\sqrt{5}}{2}$ d) no real roots

12. The solution of $(2x-1)^2=9$ is equal to

a) -1 b) 2 c) -1,2 d) None of these

13. Which of the following should be added to make x^4+64 a perfect square

a) $4x^2$ b) $16x^2$ c) $8x^2$ d) $-8x^2$

14. The number of points of intersection of the quadratic polynomials x^2+4x+4 with x axis is a) 0 b) 1 c)0 or 1 d) 2

<u>II Answer Any 10 Q.No.29 Compulsory:</u> 2x10=20

15. If BX A $=\{(-2,3), (-2,4),(0,3), (3,3) (3,4)\}$ find A and B

16. Let A= $\{1,2,3,4...45\}$ and R be the relation defined as " is a square of " on A. Write R as a subset of AXA. Also find the domain and range of R

17. If A= $\{1,3,5\}$ B= $\{2,3\}$ then find AXB and BXA.

18. A Relation R is given by the set $\{x,y|y=x+3, \in \{0,1,2,3,4\}$. Find the domain and range.

19. If 3+k, 18-k, 5k+1 are in A.P, then find k.

20. Find LCM of $x^4 - 1$, $x^2 - 2x +1$

21. Determine the nature of $15x^2+11x+2=0$

22. Find the sum and the product of the quadratic equation $x^2+8x-65=0$

23. If one root of the equation $2y^2-ay+64=0$ is twice the other then find the values of a.

24. Find the LCM of the polynomials x^4-27a^3x, $(x-3a)^2$ whose GCD is $(x-3a)$.

25. Find the square root of $9x^2-24xy+30xz-40yz+25x^2+16y^2$.

26. Find the value of x for which the roots of the equation $(5k-6)x^2+2kx+1=0$ are real and equal.

27. If the sum and the product of roots are $-\frac{3}{2}$ and -1. Find the equation

28. The father's age is six times his son's age six years hence the age of father will be four times his son's age. Find the present age(in Years) of son and the father.

29. Simplify $\frac{x^3}{x-y} + \frac{y^3}{y-x}$.

<u>III. Answer the following Q.No.43 Compulsory:</u> 10x5=50

30. Represent each of the given relation by

a) an arrow diagram, b) a graph and c) a set in Roster form, when ever possible $\{(x,y)|x = 2y, x \in (2,3,4,5)$, y$\in \{1,2,3,4\}$.

31. Find HCF of 252525 and 363636.

32. The ratio of 6th and 8th term of an A.P is 7:9. Find the ratio of 9th term to 13th term.

33. Let A={x∈N/1<x<4} B={x∈W/0≤x<2} C={x∈N/x<3}. Then verify Ax(BUC) = (AXB) U (AXC).

34. If $P_1^{x^1}$ x $P_2^{x^2}$ x $P_3^{x^3}$ x $P_4^{x^4}$=113400 when P_1,P_2,P_3,P_4 are in ascending order and x_1,x_2,x_3,x_4 are integers, find the value of P_1,P_2,P_3,P_4 and x_1,x_2,x_3,x_4.

35. The sum of 3 consecutive terms that are in A.P is 27 , and their product is 288. Find the 3 terms.

36. Find GCD $3x^4+6x^3-12x^2-24x$, $4x^414x^3+8x^2-8x$.

37. Find square root $6x^4-16x^3+17x^2-2x+1$.

38. Solve $pqx^2-(p+q)^2x+(p+q)^2 =0$.

39. A bus covers a distance of 90km at a uniform speed. Had the speed been 15km/hour more it would have taken 30 minutes less for journey. Find the original speed of the bus.

40. Solve x+y+z=5 , 2x-y+z=9 , x-2y+3z=16.

41. The roots of equation $x^2+6x-4=0$ are α , β find the quadratic equation where results are $\frac{2}{\alpha}$ and $\frac{2}{\beta}$.

42. Simplify $\frac{1}{x^2-5x+6} + \frac{1}{x^2-3x+2} - \frac{1}{x^2-8x+15}$.

43. If the roots of the equation $(c^2-ab)x^2 -2(a^2 -bc)x +b^2 -ac=0$ are real and equal prove that either a=0, (or) $a^3 +b^3 +c^3 =3abc$.

IV. Answer the following: 2x8=16

44. a)Construct a triangle similar to a given triangle ABC with its sides equal to 4/5 of the corresponding sides of the triangle ABC(scale factor 4/5<1)   (Or)
b)Draw a tangent at any point R on the circle of radius 3.4cm and centre P?

45. a)Discuss the nature of the solutions of $x^2 +2x+5$
    (or)   b)$x^2 +x-12$.