DELHI PUBLIC SCHOOL, JAMMU
ASSIGNMENT 2019-20

Class:X   **Sub:-Mathematics**

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Section A

    Objectives   1X20=20

1. The number of polynomials having zeroes as -2 and 5 is
   (a) 1   (b) 2   (c) 3 (d) more than 3
2. n^2-1 is divisible by 8,if n is
   (a) an integer   (b) natural number   (c)an odd integer (d) an even integer

3. The pair of linear equation 7x-3y=4 and 14x+4y=5 have
   (a) 1 solution   (b) 2 solution   (c) 3 solution   (d) no solution
4. A pole 10 m high cast a shadow 10m long on the ground,then the suns elevation is
   (a) 60   (b) 45   (c) 30   (d) 90
5. Which of the following is not a measure of central tendency
   (a) Mean   (b) Median   (c) Range   (d) Mode.

6. IF mode=80 and mean=110 then the median is
   (a) 110   (b) 120   (c) 100   (d) 90
7. A ladder 10m length touches a wall at height of 5m.The angel Q made by it is
   (a) 90   (b) 60   (c) 45   (d) 30
8 Tangents drawn from external point are of equal ----------
9 The line touches the circle exactly one point is called --------
10 A circle have atmost---------- tangents.
11 The zeroes of quadratic polynomial x^2+99x+127 are
   (a) Both positive (b) both negative   (c) one positive and one negative   (d) both equal
12 The number of solution of pair of linear equation x+2y-8=0 and 2x+4y=16
    (a) 1   (b) 0   (c) infinitely many   (d) none
13 The value of K for which the pair of equation kx-y=2 and 6x-2y=3 has unique sol
    (a) K=3   (b) k=0   (c) k not equal 0   (d) k not equal 3
14 Sin^2Q+ Cos^2Q=----------
15 Sin (90-Q)=----------
16   The mean and median of the data is 14 and 15.The value of mode is
    (a) 16   (b) 17   (c) 18   (d) 13
17 sides of two similar triangles are in the ratio 4:9. Area of these triangles are in the ratio .
    (a)   2:3   (b) 4:9   (c) 81:16   (d) 16:81
18 theparimeter of similar triangles ABC and LMN are 60 cm and 40 cm if LM=8 cm length of AB is
    (a)   10 cm   (b) 8 cm   (c)   5 cm   (d)   6 cm
 19   if a pair of linear equation is consistent , then the lines will be
    (a)parallel   (b) consistent   (c) co incident   (d) always intersecting
20 the number of zeros for the polynominal y =p(X) .if graph meet x axis at 3 point is

(a) 3   (b) 1   (c) 2   (d) 0

Section B   **2x6=12**

Q21 Prove thatTangents drawn from external point of the circle are of equal length .

OR

   Prove that tangent drawn at the end of diameter of a circle are parallel.

Q22 If the area of two similar triangles are equal, prove that they are congruent.

Q23 Find two numbers whose sum is 27 and product is 182.

Q24 If tan (A+B) = $\sqrt{3}$, tan (A-B)= $\frac{1}{\sqrt{3}}$. Find A& B.

Q25The length of shadow of tower on plane ground $\sqrt{3}$ times the height of tower. Find the angle of   elevation of sun.

Q26 $x + y = 5, 2x - 3y = 4$.Solve by elimation method.

Section C   **3x8=24**

Q27Find the area of rhombus if its vertices are (3,0), (4,5),(-1,4)and (-2,-1)taken in order.

Q28Prove that the parallelogram circumscribing a circle is a rhombus.

Q28 As observed from the top of 75m high light house from the sea level, the angle of depression of two ships are 30° and 45°. If one ship is exactly behind the other on the same side of the light house, find the distance between the two ships.

Q29 the median is 28.5,find the value of x and y.

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	total
frequency	5	x	20	15	y	5	60

OR

State and Prove Thales Theorem.

Q30 The sum of two digit no. and the no. obtained by reversing the digit is 66 . If the digits of the no. differ by two, find the no. How many such no.s are their.

Q31 Prove that $\sqrt{5}$ is irrational.Q32The angle of a elevation of the top of tower from two points at a distance of four meter and 9 meter from the base of tower and in the same straight line with it are complementary. Prove that height of tower is 6 ms.

OR

Prove that : $(\sin A + cosec\, A)^2 + (\cos A + \sec A)^2 = 7 + tan^2 A + cos^2 A$

Section D   **4x6 =24**

Q33 Find the centre of the circle passing through the points (6,-6),(3,-7)and(3,3).

OR

Q34 Find the area of quad.whose vertices taken in the order A(-1,-3) B(5,-7) C(10,-2) D(5,17).

Q35 Prove that opposite sides of quad. Circumscribing a circle subtended supplementary angle at the centre of the circle.

Q36 Prove that the area of an equilateral triangle described on one side of square is equal to the half the area of equilateral triangle described as one of its diagonal.

Q37 Prove that $\dfrac{tan\,Q}{1-cotQ}+\dfrac{cotQ}{1-tanQ}$=1+Sec QcosecQ

Q38 Prove that the ratio of the area of two similar triangles is equal to the ratio of the squares of any two corresponding sides .

Q39 Draw the graph of the equation x-y+1=0 and 3x+2y-12=0. Determine the coordinates of the vertices of the triangle formed by these lines and the x-axis,and shade the triangular region.

OR

Q40 Obtain all zeros of the polynomial x^4-3x³-x²+9x-6 if two of its zeros are -$\sqrt{3}$ and $\sqrt{3}$.

+9x-6 if two of its zeros are -$\sqrt{3}$ and $\sqrt{3}$.

TOPICS:

Real number, Polynomials, Linear equations, Similar triangles, Coordinate geometry, Trigonometry,

Circles, Applications to trigonometry, Statistics