Delhi Public School, Jammu

Annual Examination (2019-20)

Class:- IX ASSIGNMENT Sub: Maths

Section A

1.Mean of data 3,0,5,1,6,0,1 is._____

2.Degree of polynomial $5x^2+ 2x^5+1$ is _____

3.Show that -1 and -2 are the zeroes of the polynomial x^2+3x+2.

4.Give the abscissa and the ordinate for each of the following points (1,-2)

5.What are the coordinates of the origin?

6. (-3,-5) lies in ---------- quadrant

7 .If A,B and C are three points on a line, and B lies between A and C , then (prove that AB+ BC = AC.

8. It is known that x+y =10 and that x=z. Show that z+y = 10.

9 Rational numbers between 1and 4 are

(a) 2 (b) 3 (c) 4 (d) infinity

10. volume of sphere is

(a) $\frac{2}{3}\pi r^3$ (b) $\frac{1}{3}4\pi r^3$ (c) $\frac{1}{3}\pi r^2$ (d) none of these

Q11. If x+2 is a factor of x^2 + mx + 14,then m =

(a) 7 (b) 2 (c) 9 (d) 14

Q12. If x+1 is a factor of the polynomial $2x^2$+kx, then k =

(a) -2 (b) -3 (c) 4 (d) 2

Q13. The ordinate of any point on x-axis is

(a) 0 (b) 1 (c) -1 (d) any number

Q14.The perpendicular distance of the point P (4,3) from y-axis is

(a) 4 (b) 3 (c) 5 (d) none of these

Q15.Side BC of a triangle ABC h has been produced to a point D such that $\angle ACD = 120^0$

If $\angle B=\frac{1}{2}\angle A$, then $\angle A=$

(a) 80^0 (b) 75° (c) 60° (d) 90°

Q16. An exterior angle of a triangle is 108° and its interior opposite angles are in ratio 4:5. The Angles of the triangles are

(a) 48°, 60° ,72° (b) 50° ,60° ,70° (c) 52° ,56°, 72° (d)42°, 60°, 76°

Q17. In a Δ ABC, If AB=AC and BC produced to D such that $\angle ACD = 100^0$ then $\angle A =$

(a) 20° (b) 40° (c) 60° (d) 80°

Q18. The sides of triangles are 7cm, 9cm, 14cm. Its area is

(a) $12\sqrt{5}$ cm^2 (b) $12\sqrt{3}$ cm^2 (c) $24\sqrt{5}$ cm^2 (d) 63 cm^2

Q19. The sides of triangles are 50cm, 78cm, 112cm. Its smallest altitude is

(a) 20 cm (b) 30 cm (c) 40 cm (d) 50 cm

Q 20. If every side of a triangle is doubled, then increase in area of triangle, is

(a) $100\sqrt{5}$ % (b) 200 % (c) 300 % (d) 400 %

Section B

21. Find 4 rational numbers between $\frac{1}{7}$ and $\frac{3}{14}$

Or

Find 2 irrational no between 0 and 0.1

22. . Find the value of k, if x= 2, y= 1 is a solution of the equation x-3y =k

Or

Find the value of K, if (-2,-1) is solution of equation 3x+5y=k . find three more solutions for the equation obtained.

23.Prove that if two lines intersect then vertically opposite angles are equal

24. If AB= AC and DB=DC. Prove that $\angle ABD = \angle ACD$.

25. .Find 4 solution for 2x+3y= 7.

26. Prove that equal chords of circle are equidistant from centre of circle.

Section C

27. Represent $\sqrt{2}$ on number line.

28.If x+5 is factor of$x^3+2x^2-13x+10$, find other 2 factors.

29. Find the value of K, if (2,1) is solution of equation 2x+3y=k . find three more solutions for the equation obtained.

Or

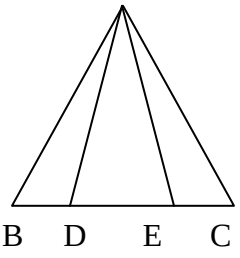
If force exerted to pull a cart is directly proportional to the acceleration produced in the body. Express the situation in the form of linear equation taking constant mass, equal to 6 kg. Also draw graph for the situation.

30.Show that the line segment joining the mid-points of opposite sides of quadrilateral bisect each other.

Or

If non parallel sides of trapezium are equal, then prove that it is cyclic.

31. In an isosceles triangle ABC, AB = AC and D and E are points on BC such that BE = CD. Show that AD = AE



32. 17. A park is in the shape of quadrilateral ABCD, has ∠C = 90°, AB= 9m , BC = 12m, CD = 5m and AD= 8m . How area does it occupy.

Or

A field is in the form of trapezium with parallel lengths be 25m and 10m. Find its area if other two sides are 14m and 13m respectively

33. Given below are the seats won by different political parties in a poll.

Draw bar graph.

Political party	A	B	C	D	E	F
Seats won	75	55	37	29	10	35

34. Construct angles of 75° and 135°

35. Diameter of a roller is 84cm and its height is 120cm. It takes 500 complete revolutions to move once over to level a playground, Find the area of playground in m^2.

36.Diameter of moon is approximately one-fourth of the diameter of earth. Find ratio of their surface areas. Also find ratio of their volumes.

Or

The radius of a spherical balloon increases from 7cm to 14 cm as air is being pumped into it. Find the ratio of the surface areas of the balloon in the two cases.

Section D

37. For given data construct frequency polygon.

Number of letters	1-5	6-10	11-15	16-20	21-25
Number of surnames	6	30	40	16	4

Or

For given data construct histogram.

Number of letters	1-4	4-6	6-8	8-12	12-20
Number of surnames	6	30	44	16	4

38. Show that diagonals of square are equal and bisect each other at right angles

Or

Show that the line segment joining the mid-points of sides rectangle forms a rhombus .

39. If PQ II ST, ∠PQR = 110° and ∠ RST = 130°, Find ∠QRS

40. In ΔPQR, PR> PQ and PS bisects ∠QPR. Prove that

∠PSR> ∠PSQ.

41.The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.

42.Construct a triangle PQR in which PR-PQ= 2cm, QR =6cm and $\angle Q = 60^\circ$.

Or

Construct a Δ PQR, such that QR = 8cm, $\angle Q = 30°$ and PQ – PR= 3.5cm

44.Twenty seven solid iron spheres, each of the radius r and surface area S are melted to form a sphere with surface area S'. Find the:

(I) Radius r' of the new spheres

(II) Ratio of S and S'.

Or

A dome of building is in the form of hemisphere. From inside it is whitewashed at the rate of Rs4 per square metre. If total cost of whitewashing is Rs 800. Find inner surface area and volume of air in dome..

45. Factorise $x^3-23x^2+142x-120$