CENTRAL PUBLIC SCHOOL

Subject – Maths
Class – IX

TAJPUR ROAD, SAMASTIPUR
MID TERM EXAM – 2019

Time- 3 hrs.
F. M. – 80

Section – A

20 X 1 = 20

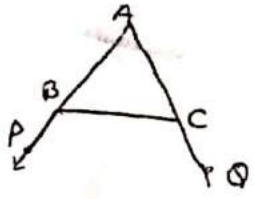
Each Questions carries 1 mark.

1. What is the p/q form of the number $0.\overline{3}$?
2. What is the degree of zero polynomial?
3. What is abscissa?
4. Pythagoras was a student of whom?
5. What are the shape of boundaries of surface?
6. What is the maximum number of terms in a polynomial of degree 10.
7. What is rationalising factor for the denominator of the expression $\frac{1}{\sqrt{5}-2}$?
8. Write the equation representing X-axis.
9. Write the complementary angle of 43°.
10. Define the reflex angle?
11. Two sides of a triangle are say 4cm and 1.5cm. What can never be the length of the third side?
12. If Δ ABC is congruent to Δ DEF by S.S.S congruence rule. Find the corresponding angles.
13. Define isosceles trapezium.
14. What is property of consecutive angles of parallelogram?
15. Area of figure A= 20 sq. unit and area figure of B = 20 sq. unit. Then what can be said about the congruency of two figures.
16. The diagonal of square is 8 cm. what is its area?
17. Class mark of (100 – 120) is _____
18. Mean of observations = $\frac{\epsilon f x}{\square}$
19. Formula of area of isosceles Δ is _____
20. Formula of semi perimeter of ~~angle~~ Δ _____

Section – B

Each Questions carries 2 Marks **6X2 = 12**

21. Write the rational no. between $\frac{4}{9}$ and $\frac{4}{11}$
22. Expand using suitable identity $(-2x + 5y - 3z)^2$
23. Does the graph of the equation y = mx + c pass through the origin? Give reason.
24. If the difference between two supplementary angles is 40°. Then find the angles.
25. In the given figure sides AB and AC of Δ ABC are produced to point P and point Q. and $< PBC >$ $\angle QCB$ show that AB > AC



26. Prove that each angle of an equilateral Δ is 60°

Section – C

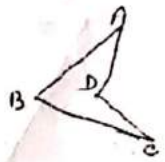
8x3 =24

Each Question Carries 3 marks

27. If $x = 5 - 2\sqrt{6}$ then find the value of $x^2 + \frac{1}{x^2}$

28. Factorise $x^8 - y^8$

29. In the given figure prove that $\angle ADC = \angle A + \angle B + \angle C$



30. Prove that sum of all angles of a Δ is 180°

31. Prove that bisector of angles of a parallelogram enclose a rectangle.

32. Prove that medium of a Δ divides it into two triangles in equal area.

33. Sides of scalene ◺ are 8cm 15cm and 17 cm. find its area.

34. Following tables gives the distribution of students of Section A and Section B of a class according to marks obtained by them.

Marks	0 - 15	15 – 30	30 – 45	45 – 60	60 – 75	75 - 90
Section A	5	12	28	30	35	13
Section B	3	16	25	27	40	10

Represent the marks obtained by them on frequency polygon.

Section – D

6X4 = 24

Each question carries 4 marks

35. If $a + b + c = 0$ then prove that $a^3 + b^3 + c^3 = 3abc$

36. Prove that the midpoint theorem.

37. Show that if the diagonals of parallelogram are equal and bisect each other at 90°. Then it is a square.

38. Find the value of a and b if $\frac{7+3\sqrt{5}}{3+\sqrt{5}} - \frac{7-3\sqrt{5}}{3-\sqrt{5}} = a + b\sqrt{5}$

39. If each side of a triangle is double then find the ratio of area of new triangle thus formed and given triangle.

40. find the mean, median and mode of given data table.

Marks	No. of student
10	2
30	8
50	10
70	5
90	5
	N = 30