ST. XAVIER'S SENIOR SECONDARY SCHOOL, DELHI – 110054

Class 9 Time : 1½ hrs.

20-12-2017 Pre-Annual Test in MATHEMATICS M. Marks : 40

General Instructions:

i) Attempt all the questions.

ii) The question paper consists of 20 questions divided into four sections A, B, C and D. Section A comprises of 8 sections of 1 mark each, section B comprises of 6 questions of 2 marks each, section C comprises of 4 questions of 3 marks each and section D comprises of 2 questions of 4 marks each.

Section – A (1 x 8 = 8 marks)

1. In ΔABC, AB = 5cm, BC = 8cm and AC = 7cm. If D and E are respectively the mid points of AB and BC then determine the length DE.

2. Find the mode of the data: 15, 14, 19, 20, 14, 15, 16, 14, 18, 15, 14, 19, 17, 16, 15.

3. Find semi perimeter of an equilateral triangle whose sides measure $2\sqrt{3}$ cm .

4. Two opposite angles of parallelogram are (50 – x)° and (3x – 2)°. Find the value of x.

5. Find the class mark of class 120 – 130.

6. The angles of quadrilateral are 4x°, 15x°, 7x° and 10x°. Find the measure of largest angle of this quadrilateral.

7. Find the mean of first 5 natural numbers.

8. State converse of mid point theorem.

Section - B (2 x 6 = 12 marks)

9. Ten observations 6, 14, 15, 17, x + 1, 2x – 13, 30, 32, 34, 43 are written in an ascending order. The median of the data is 24. Find the value of x.

10. ABCD is a rhombus such that ∠ADB = 55°. Find the measure of ∠DAB.

11. Form a grouped frequency distribution table from the given data by taking class intervals 10 -15, 15 -20,.....etc.
15, 31, 23, 19, 29, 22, 20, 16, 12, 13, 34, 38, 33, 28, 21, 15, 18, 36, 24, 18,
12, 30, 27, 23, 20, 17, 14, 32, 26, 25, 18, 29, 24, 19, 16, 11, 22, 15, 17, 13.

12. Construct triangle XYZ in which YZ = 6cm, ∠Y = 75°, XY + XZ = 13cm.

13. Prove that the diagonal divides a parallelogram into two congruent triangles.

14. The perimeter of a right angled triangle is 40cm, its hypotenuse measures 17cm and one of the other two sides as 8cm. Find the area of this triangle.

Section - C (3 x 4 = 12 marks)

15. Construct triangle ABC in which BC = 6.5, ∠B = 75° and AC – AB = 2.5cm.

16. A random survey of the number of children of various age groups playing in a park is given below:

Age (in years)	1 – 2	2 – 3	3 – 5	5 - 7	7 – 10	10 - 15	15 - 17
No. of children	5	3	6	12	9	10	4

Draw a histogram to represent the above data.

17. Find the area of a triangle whose perimeter is 84cm and two of its sides are 30cm and 28cm. Also calculate the altitude of the triangle corresponding to side 28cm.

18. Construct ΔPQR when $\angle Q = 60°$, $\angle R = 30°$ and sum of all three sides of triangle is 12.5cm.

Section – D (4 x 2 = 8 marks)

19. Draw a frequency polygon for the following data:

Cost of living index	440-460	460-480	480-500	500–520	520–540	540–560	560–580	580–600
Number of months	2	4	3	5	3	2	1	4

20. Show that if the diagonals of a quadrilateral are equal and bisect each other at right angles then it is a square.

-x-x-x-x-x-x-x-