DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2017-18)

Class:- VIII   **Subject:- Mathematics**
Time- 3 Hrs.   **F. M:- 80**

General Instructions:-

1. All questions are compulsory.
2. The question paper consists of 28 questions divided into 4 sections A,B,C and D. Section A comprises of 4 questions of 1 mark each, Section B comprises of 6 questions of 2 marks each, Section C comprises of 8 questions of 3 marks each, Section D comprises of 10 questions of 4 marks each.
3. Handwriting should be neat and clean.

Section-A   [1x4=4]

1. Find the value of the following expression: $\left(\frac{-3}{4} \times \frac{2}{3}\right) + \left(-\frac{3}{4} \times \frac{-5}{6}\right)$

2. When a die is thrown, list the outcomes of an event of getting (a) a prime number (b) a number not greater than 5.

3. How many perfect squares are there between 1 and 100 ?

4. If the division N ÷ 5 leaves a remainder of 3, what might be the ones digit of N? Give examples.

Section-B   [2x6=12]

5. Find the values of x , for which: $\frac{x}{2} - \frac{1}{4}\left(x - \frac{1}{3}\right) = \frac{1}{6}(x + 1) + \frac{1}{12}$

6. How many sides does a regular polygon have if the measure of an interior angle is 156°?

7. Two unbiased coins are tossed Simultaneously. Find the probability of getting:
   i) two heads   ii) one head   iii)one tail   iv) at least one head .

8. Which of the following is a Pythagorean triplet? (Write reasons)
   a) (2,3,5)   b) (5,7,9)   c) (6,9,11)   d) (8,15,17)

9. Find the smallest number by which 6561 must be multiplied to obtain a perfect cube.

10. Solve the Cryptarithm: ON + ON + ON + ON = GO   or,   4 X ON = GO.

Section-C   [3x8=24]

11. Evaluate: a) $\frac{-12}{5} + \frac{-7}{20} + \frac{3}{14} + \frac{1}{7} + \frac{-1}{10}$

b) $-\frac{4}{5} \times 2\frac{3}{7} \div 1\frac{15}{16}$

12. The Four angles of a quadrilateral are as 3:5:7:9. Find the angles.

13. Construct a quadrilateral ABCD, given that BC = 4.5 cm, AD = 5.5 cm, CD = 5 cm, diagonal AC = 5.5 cm and diagonal BD = 7 cm.

14. Construct a quadrilateral MIST where MI = 3.5 cm, IS = 6.5 cm, ∠M = 75°, ∠I = 105° and ∠S = 120°.

OR

Construct a parallelogram whose diagonals intersect each other at 30^0, and the measurement of the diagonals are 5.6cm. and 6.4cm. Write steps of construction.

15. There are 500 students in a school, out of which 370 come to school by cycle; 70 by their motor cycle and remaining by their cars. Find the probability that (a) Students come to school by car. (b)Students come to school by motorcycle.(c) Which mode of transport would you like to prefer for students and why?

16. Find the square root of each of the following numbers by Division method: a) 390625
    b) $10\frac{2}{3}$(correct to two places of decimals)

OR

Find the greatest number of 5 digits which is a perfect square. Find the square root of the number so obtained.

17. The volume of a cubical box is 474.552 cubic meters. Find the length of each side of the box.

18. Without performing actual division, find the remainder left when 192837465 is divided by 11(Show the process).

<u>Section-D</u> [4x10=40]

19. Divide the sum of $-\frac{13}{5}$ and $\frac{12}{7}$ by the product of $\frac{-31}{7}$ and $-\frac{1}{2}$.

20. I have a total of Rs.660 in coins of denomination Rs.2,Rs.5 and Rs.10. The number of Rs.5 coins is 3 times the number of Rs.10 coins. The total number of coins is 160. How many coins of each denomination are with me?

21. Hasan buys two kinds of cloth materials for school uniforms, shirt material that costs him Rs. 50 per metre and trouser material that costs him Rs.90 per metre. For every 3 meters of the shirt material he buys 2 metres of the trouser material. He sells the

materials at 12% and 10% profit respectively. His total sale is Rs.36,600. How much trouser material did he buy?

OR

A number consists of two digits whose sum is 9. If 27 is subtracted from the number, its digits are reversed. Find the number.

22. The following figures GUNS and RUNS are parallelograms. Find x and y.
    (Lengths are in cm)
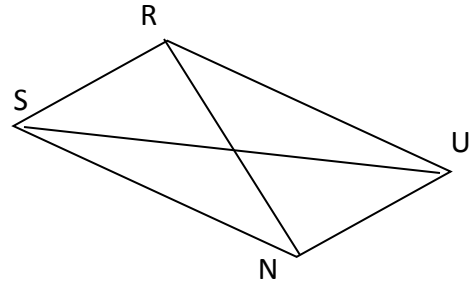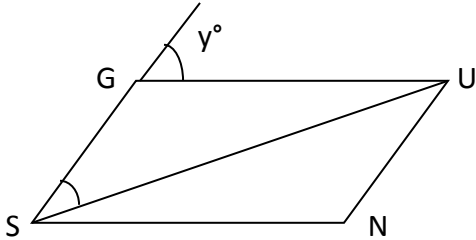
23. In a parallelogram ABCD, the bisectors of an angle ∟A and angle ∟B meet at O. Find the angle ∟AOB.

OR

The diagonals of a rectangle ABCD intersect at 0. If the angle ∟BOC = 68^0, find the angle ∟ODA.

24. Construct A rhombus with side 4.5 cm and one diagonal 6 cm. Write steps of construction.

25. On a particular day, the sales (in rupees) of different items of a baker's shop are given below. Draw a pie chart for this data.

Ordinary bread	320
Fruit bread	80
Cakes and pastries	160
biscuits	120
others	40
Total	720

26. In a right triangle ΔABC, ∠B = 90°.
    (a) If AB = 6 cm, BC = 8 cm, find AC.   (b) If AC is three more than two times of BC and AB is equal to 12cm. find AC.

27. Find the cube root of each of the following numbers by prime factorisation method :
    (a) 166375   (b) 110592.

28. A four digit no. 4ab5 is divisible by 55 and hence by 11. Then find the value of b-a.