SUBJECT:MATHEMATICS   MAX. MARKS: 80
CLASS:VII   DURATION : 2 ½ hours

SECTION – A

Fill in the blanks. 5 X 1 = 5 marks

1. The sum of negative and positive integer is always_____.
2. A line that intersects two or more lines at distinct points is called. _____.
3. The sum of the lengths of any two sides of a triangle is _____ the third side of the triangle.
4. The mean of the first five whole numbers is _____.
5. The form of equation for the below statement is: the sum of numbers x and 4 is 9 ; _____

Answer the following: 5 X 1 = 5 marks

1. Solve: $3n + 7 = 25$
2. A die is thrown once. What will be the probability of getting a prime number?
3. Two angles of a triangle are 30^0 and 80^0. Find the third angle.
4. Express 0.041 as a fraction.
5. Arrange the following integers in ascending order. -5, 3, -9,-12, 6, -1,12

Tick the appropriate answer. (MCQ) 10 x 1 = 10 marks.

1. The hypotenuse of a right triangle is 17 cm long. If one of the remaining two sides is 8 cm in length, then the length of the other side is
   (a) 15 cm   (b) 12 cm   (c) 13 cm   (d) none of these.

2. In triangles ABC and PQR, $\angle B = 90°$, AC = 8 cm, AB = 3 cm, $\angle P = 90°$, PR = 3 cm, QR = 8 cm By which congruence rule the triangles are congruent?
   (a) SAS   (b) RHS   (c) ASS   (d) none of these

3. A school team won 6 games this year against 4 games won last year. What is the per cent increase?
   (a) 75%   (b) 50%   (c) 60%   (d) none of these

4. The number of illiterate persons in a country decreased from 150 lakhs to 100 lakhs in 10 years. What is the percentage of decrease?
   (a) 30%   (b) 50%   (c) 33 %   (d) none of these

5. Find the angle, which is equal to its complement.
   (a) 30° (b) 25° (c) 35° (d) 45°

6. If two adjacent angles are supplementary, then they form_____.
   (a) Corresponding angles   (b) vertically opposite angles
   (c) a linear pair of angles   (d) a ray

7. Write the statements "One third of a number plus 5 is 8" in the form of equations:
   (a) 3m + 5 = 8   (b) m + 5 = 8   (c) $\frac{1}{3}$m + 5 = 8   (d) $\frac{1}{3}$m + 8 = 5

8. The mean of the first seven natural number is_____.
   (a) 2   (b) 5   (c) 3   (d) 4

9. The value of 1.3 x 3.1 is

(a) 403   (b) 0.403   (c) 4.03   (d) 0.0403

10. $-6 \div (-3)$ gives

  (a) -9 (b) 2   (c) -2 (d) 3
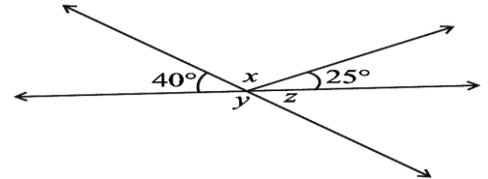
SECTION – B   6 X 2 = 12 marks

1. The temperature at 12 noon was 10°C above zero. If it decreases at the rate of 2°C per hour until midnight, at what time would the temperature be 8°C below zero? What would be the temperature at mid-night?

OR

Evaluate each of the following:
     a) $[(-36) \div 12] \div 3$ (b) $[(-6) + 5)] \div [(-2) + 1]$

2. Find the values of the angles x, y, and z in the given figure:

3. If $\Delta DEF \square \Delta BCA$, write the part(s) of ΔBCA that correspond to (i)$\angle$ E (ii) EF (iii) $\angle$ F (iv) DF

4. PQR is a triangle right angled at P. If PQ = 10 cm and PR = 24 cm, find QR.

5. The length of a rectangle is 7.1 cm and its breadth is 2.5 cm. What is the area of the rectangle?

6. Solve the following equations.
     (a) $10 = 4 + 3(t + 2)$ (b) $28 = 4 + 3(t + 5)$
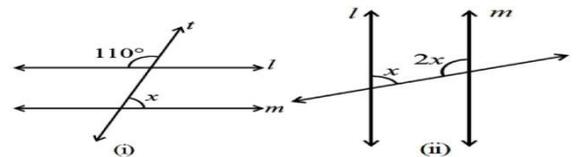
OR

The sum of three times a number and 11 is 32. Find the number.

SECTION – C   8 X 3 = 24 marks

1. The marks (out of 100) obtained by a group of students in a science test are 85, 76, 90, 85, 39, 48, 56, 95, 81 and 75. Find the:
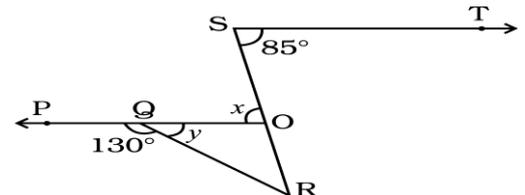   a) Range of the marks obtained.   b) Mean marks obtained by the group.
   c)What you will do to get good marks?

2. Find the value of x in each of the following figures if $l \parallel m$.

OR

In the below figure, if PQ||ST then find the value of x + y.

3. If Meena gives an interest of Rs 45 for one year at 9% rate p.a.. What is the sum she has borrowed?
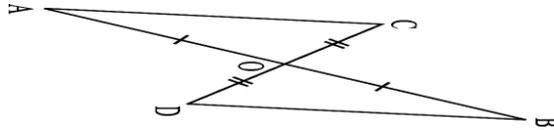
4. Solve (a) $4 (m + 3) = 18$ (b) $-2(x + 3) = 5$

5. Sushant reads $\dfrac{1}{3}$ part of a book in 1 hour. How much part of the book will he read in $2\dfrac{1}{5}$ hours?
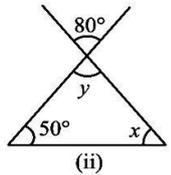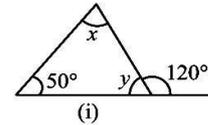
OR

Find: (i) $36 \div 0.2$ (ii) $3.25 \div 0.5$ (iii) $30.94 \div 0.7$

6. In the below figure, AB and CD bisect each other at O. Prove that (ii) $\triangle AOC \cong \triangle BOD$ (ii) AC = BD

7. Find the values of the unknowns x and y in the following diagrams:

(i)   (ii)

8. The foot of a ladder is 6 m away from its wall and its top reaches a window 8 m above the ground, (a) Find the length of the ladder. (b) If the ladder is shifted in such a way that its foot is 8 m away from the wall, to what height does its top reach?

OR

Two poles of 10 m and 15 m stand upright on a plane ground. If the distance between the tops is 13 m, find the distance between their feet.

SECTION – D   **6 X 4 = 24 marks**

1. Find the amount to be paid at the end of 3 years in each case;
a) Principal = Rs. 1,200 at 12 % p.a.   b) Principal = Rs.7,500 at 5 % p.a.

OR

Chalk contains calcium, carbon and oxygen in the ratio 10:3:12. Find the percentage of carbon in chalk.

2. The length of a rectangle is two times its width. The perimeter of the rectangle is 180 cm. Find the dimensions of the rectangle and also find its area.

3. ABCD is quadrilateral then prove AB+ BC+ CD+ DA < 2 (AC + BD)

4. Salil wants to put a picture in a frame. The picture is 7 3/5 cm wide. To fit in the frame the picture cannot be more than 7   3/10 cm wide. How much should the picture be trimmed?

5. The people of Sundargram planted trees in the village garden. Some of the trees were fruit trees. The number of non- fruit trees were two more than three times the number of fruit trees. What was the number of fruit trees planted if the number of non- fruit trees planted was 77?

6. Two hundred students of 6th and 7th class were asked to name their favourite colour so as to decide upon what should be the colour of their School Building. The results are shown in the following table. Represent the given data on a bar graph.

Favourite Colour	Red	Green	Blue	Yellow	Orange
Number of Students	43	19	55	49	34

Answer the following questions with the help of the bar graph:

(i) Which is the most preferred colour and which is the least preferred?
(ii) How many colours are there in all? What are they?