Std: VII   Marks: 80
Date: 13/2/20   Time: 2 hours

## Section A (40 marks)

Question 1. Fill in the blanks.   [10]

a. The sum of 7p, 3p and 4p is _____.

b. The perimeter of a square of side 4m is _____ and its area is _____.

c. If x + 9 = 15, the value of x is _____.

d. When the transversal across two parallel lines forms an angle of 75° its corresponding angle will measure _____ and allied angle will measure _____

e. The improper fraction of $3\frac{1}{7}$ is _____.

f. In an isosceles triangle the _____ angles are always equal to each other.

g. The area of a rectangle of length 3m and breadth 7m is _____.

h. When the three sides of a triangle are equal to the three corresponding sides of another triangle both triangles are said to be congruent by the _____ test of congruency.

Question 2

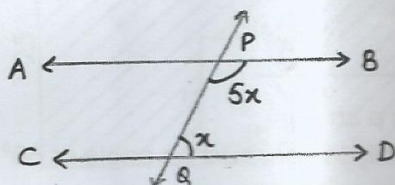a.   [3]
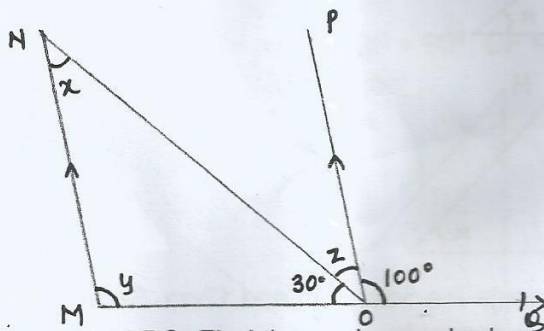
In the given figure MN II PO. Find the angles marked x, y, z giving reasons.

b. Divide :- $3x^2 + 26x + 35$ by $3x + 5$ [3]

c.

i) $\frac{x+5}{2} + \frac{x}{3} = 20$ [2]

ii)   y + 10% of y = 33   [2]

Question 3

a. Find the mean, median and mode of :-   [3]
    6,6,18,8,8,18,17,20,18,6,18

b.

Find the measure of 'x' in the given figure when AB II CD and also find angle PQC.   [3]
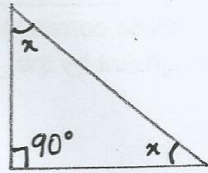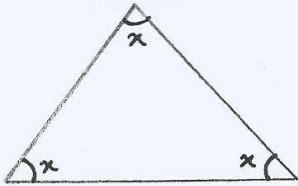
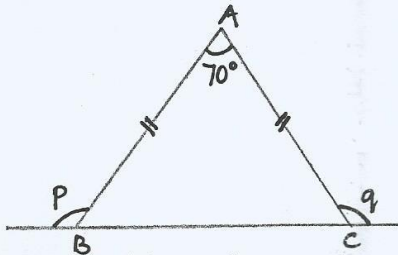c. The base angles of an isosceles triangle are twice the measure of the vertical angle. Find each angle of the triangle.   [4]

Question 4

   a. Solve the following: [2]

      i) $7x = 56$

      ii) $\dfrac{y}{-3} = -8$

   b.

      i)   Two complementary angles are in the ratio 4 : 5. Find the angles.   [2]

      ii)   If $2x + 10°$ and $3x + 20°$ are supplementary. Find the value of x. [2]

   c. If A = { 10,12,16,18,20 } and B = { 10,13,18,21 } find: [4]

      i)   A ∪ B

      ii)   A ∩ B

      iii)   A – B

      iv)   B – A

Section B (40 marks)

Question 5

   a. Find the value of x in the given figures.   [4]

      i)

      ii)

   b. i) The sides of a triangle are 5cm, 7cm and 12cm. State whether it is a right angled triangle.   [2]

      ii) Multiply $-5m^2 - 12n^2$ by $-3m^2n^2$ [1]

   c. A man is twice as old as his son. 20 years ago the man was 12 times the age of the son. Find their present ages.   [3]

Question 6

   a.   [3]

   Find the measure of the angles p and q.

   b. Use a ruler and a compasses only to construct an angle of 60°   [3]

   c.

      i)   Eight times a number is 96. Find the number.   [2]

      ii)   Divide $21x^2y^4 - 9xy^3$ by $-3xy$ [2]

Question 7

a. For the universal set A = { 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28 }
   Find its subsets M and N such that: [2]
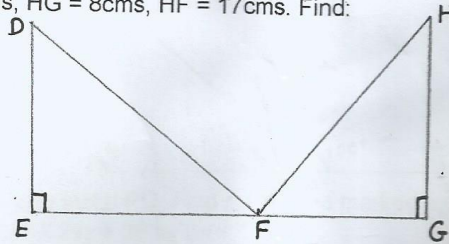   M = { even numbers}
   N = { odd numbers less than 22 }

b.
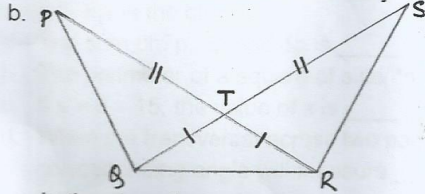
   In the given figure prove that: [4]
   i)   △ PQR ≅ △ SQR
   ii)   ∠P = ∠S

c. The birth rate per thousand of four countries is shown below. Represent
   the above data by a bar graph. [4]

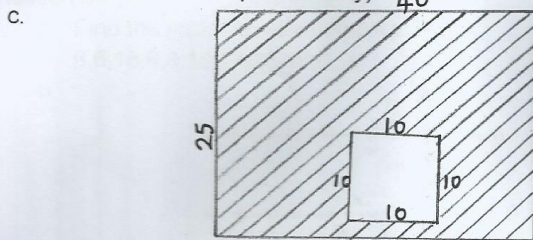| Country	China	India	Germany	U.K.
Birth Rate	42	35	14	28

Question 8

a. In the given figure, angle DEF = angle HGF = 90°; DF = 25cms,
   DE = 20cms, HG = 8cms, HF = 17cms. Find: [3]

   i)   EF
   ii)   FG
   iii) EG

b. Construct a △ MNP such that MN = 5.5cms MP = 4 cms and ∠M = 90°
   (use ruler and compasses only) [3]

c.

   Find the area of the shaded portion and the perimeter of the unshaded
   portion in the given figure. (measurements are in cms.) [4]

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