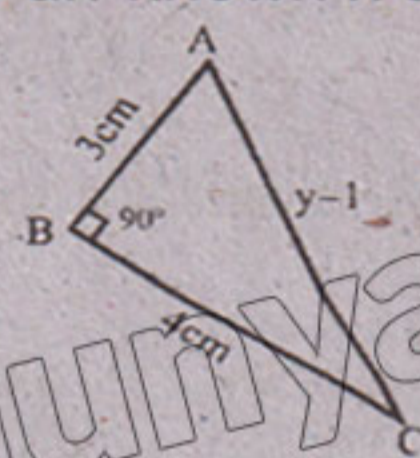
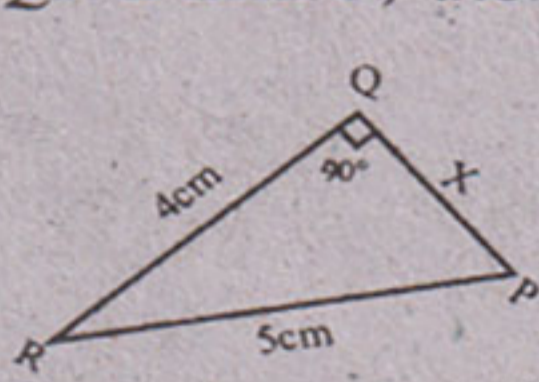


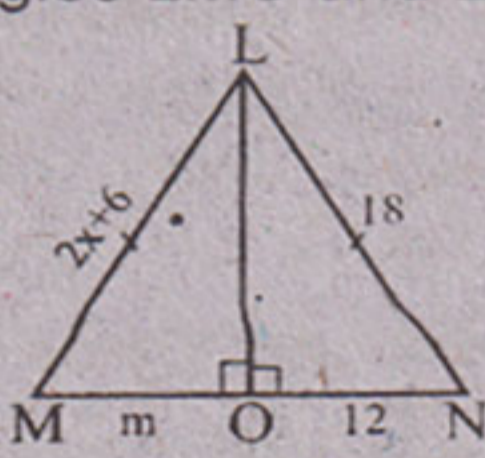
**SECTION-I**

- 2. Write short answers to any SIX (6) questions. (12)**
- i** Define singular matrix and give example.
- ii** Find product  $\begin{bmatrix} 1 & 2 \\ 5 & -4 \end{bmatrix}$
- iii** Simplify  $(x^3)^2 \div x^{3^2}$
- iv** Simplify  $(2-3i)(3-2i)$  and write answer in  $a+ib$  form.
- v** Calculate  $\log_5^3 \times \log_3 25$
- vi** Find the value of  $a$  if  $\log_5^3 = 0.5$
- vii** Define rational expression.
- viii** Simplify  $\sqrt[3]{243x^5y^{10}z^{15}}$
- ix** Use the remainder theorem to find the remainder when  $3x^3 - 10x^2 + 13x - 6$  is divided by  $(x-2)$
- 3. Write short answers to any SIX (6) questions. (12)**
- i** Find HCF of  $102xyz^2, 85x^2yz, 187xyz^2$ .

- ii** Solve the equation  $2\sqrt{t+4} = 5$
- iii** Solve the inequality  $\frac{1}{2}x - \frac{2}{3} \leq x + \frac{1}{3}$
- iv** Whether  $(2, 5)$  lies on the line  $2x - y + 1 = 0$  or not.
- v** Define cartesian plane.
- vi** Find the distance between the pair of points  $A(2, -6), B(3, -6)$ .
- vii** Find the mid-point of the line segment joining the pair of points  $A(-4, 9)$  and  $B(-4, -3)$ .
- viii** Define congruent triangles.
- ix** If  $\Delta PQR \cong \Delta ABC$ , then find the un-known  $x$  and  $y$ .



- 4. Write short answers to any SIX (6) questions. (12)**
- i** In congruent triangles LMO and LNO find ' $x$ ' and ' $m$ '.



- ii** 3cm, 4cm and 7cm are not the lengths of a triangle. Give reason.
- iii** Define similar triangles.
- iv** Find the value of ' $x$ '.
- v** Verify that  $a = 9\text{cm}, b = 12\text{cm}$  and  $c = 15\text{cm}$  are sides of a right triangle.
- vi** Define interior of a triangle.
- vii** Find the area:
- viii** Define circumcentre of the triangle.
- ix** Construct a  $\Delta XYZ$  in which  $m\angle YZ = 7.6\text{cm}, m\angle XY = 6.1\text{cm}, x\angle X = 90^\circ$ .

**SECTION-II**

**Note: Attempt any three questions. (24)**

- 5.(a)** Solve system of linear equations by Cramer's rule:  
 $2x + y = 3$   
 $6x + 5y = 1$  (4)
- (b)** Simplify  $\frac{(243)^{-\frac{2}{3}} \cdot (32)^{-\frac{1}{5}}}{\sqrt{(196)^{-1}}}$  (4)
- 6.(a)** Use logarithm to find value of  $\frac{(8.97)^3 \cdot (3.95)^2}{\sqrt[3]{15.37}}$  (4)
- (b)** If  $x = 2 + \sqrt{3}$ , then find value of  $x - \frac{1}{x}$  and  $\left(x - \frac{1}{x}\right)^2$  (4)
- 7.(a)** Factorize cubic polynomial by factor theorem:  
 $x^3 - x^2 - 10x + 8$ . (4)
- (b)** Use division method to find the square root of:  
 $9x^4 - 6x^3 + 7x^2 - 2x + 1$ . (4)
- 8.(a)** Solve the equation and check for extraneous solution, if any  $\sqrt[3]{2-t} = \sqrt[3]{2t-28}$  (4)
- (b)** Construct the triangle ABC and draw the bisectors of its angles:  
 $m\overline{AB} = 4.6\text{cm}, m\overline{BC} = 5\text{cm}, m\overline{CA} = 5.1\text{cm}$ . (4)
- 9.** Prove that any point on the right bisector of a line segment is equidistant from its end points.  
**OR** Prove that parallelograms on the same base and between the same parallel lines (or of the same altitude) are equal in area.