


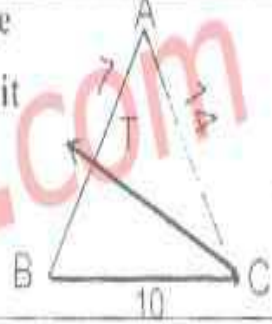
2- Attempt any six parts. (6 x 2 = 12)

i	Define singular and non-singular matrix	ii	Find the invers of $B = \begin{bmatrix} 3 & 6 \\ 2 & 4 \end{bmatrix}$ if it exists
iii	Express $\frac{1-5i}{2-7i}$ in the standard form of $a+bi$ .	iv	Simplify $\left(\frac{14x^{-2}y^{-4}}{7x^{-3}y^{-6}}\right)^{-2}$ , $x \neq 0, y \neq 0$
v	Define scientific Notation.	vi	Find the value of x. $\log_{625} 5 = 2x$
vii	If $\bar{x} + \frac{1}{x} = 4$ , then find $x^3 + \frac{1}{x^3}$	viii	State factor theorem.
ix	Factorize $x^3 - 6x^2 + 8x$		

3- Attempt any six parts. (6 x 2 = 12)

i	Define least common multiple of two expressions.	ii	Find H.C.F of $14x^4y^5z^5$ ; $49x^2yz^3$
iii	Define multiplicative property of inequality of real numbers.	iv	Solve the equation $6x + 62 = 100$
v	Write formula for degree Fahrenheit in terms of degree Celsius.	vi	Write the mid-point formula between any two points.
vii	Find the distance between the points P(4, 2) and Q(-4, 5)	viii	What is meant by S.A.A postulate.
ix	Define the point of trisection.		

4- Attempt any six parts. (6 x 2 = 12)

i	Find the area of geometric figure. 	ii	In a $\Delta ABC$ as shown in the figure, $\vec{CT}$ bisects $\angle C$ and it meets $\overline{AB}$ at T then find the length of $m\vec{CT}$ 
iii	Prove that the triangle having sides of the following measures, form right triangle, $a = 1.5$ cm, $b = 2$ cm, $c = 2.5$ cm	iv	Which of the following sets of lengths can represent the measures of the sides of triangles? (a) 3, 4, 7 (b) 6, 8, 10
v	Define Similar triangles.	vi	Define right bisector of a line segment.
vii	Define obtuse angled triangle.	viii	Construct the triangle ABC when its sides are $m\overline{AB} = 6$ cm, $m\overline{BC} = 3.5$ cm, $m\overline{AC} = 5$ cm
ix	Define circum centre of a triangle.		

SECTION - II

Note:- Attempt any three questions. Question No.9 is Compulsory. (8 x 3 = 24)

- a) Solve the system of linear equations by Cramer's rule. (04)  
 $4x - 3y = 2$  ;  $3x + 4y = 7$
- b) Simplify (04)  

$$\frac{9^{n+1} \times 10^{2n} \times 4^{3m+3n}}{15^{2n+2} \times 8^{2m+2n}}$$
- a) Use common logarithms to evaluate the following express your answer with four significant digits. (04)  

$$3 \sqrt[3]{\frac{4.813 \times 0.329}{6.475}}$$
- b) Find the value of  $a + b + c$ , when, (04)  
 $a^2 + b^2 + c^2 = 8$  and  $ab + bc + ca = 4$
- a) If  $2x^4 + 3x^2 - mx + 2$  is divided by  $x - 1$ , then remainder is 6. Find the value of m. (04)
- b) Find the H.C.F by division  $y^4 - 5y^2 + 4$ ,  $y^5 - 11y + 10$  (04)
- a) Solve the inequalities,  $x \in R$ . Also show on number line. (04)  
 $3x - 5 \geq 7x + 15$
- b) Construct the  $\Delta ABC$ , When its sides are given. (04)  
 $m\overline{AB} = 2.5$  cm,  $m\overline{AC} = 5$  cm,  $m\angle A = 60^\circ$   
 Prove that: any point on the right bisector of a line segment is equidistant from its end points. (08)

Prove that : Triangles on equal bases and of same altitudes are of equal area.