NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART I SUPPLEMENTARY SEMESTER EXAMINATIONS – AUGUST 2004
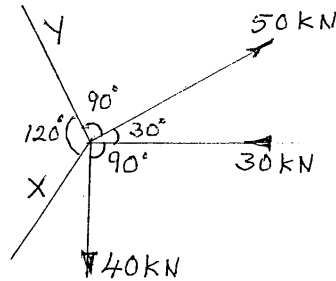**AAR 1206 – APPLIED STRUCTURAL STATICS AND DYNAMICS**

Instructions   *Time : 2 Hours*

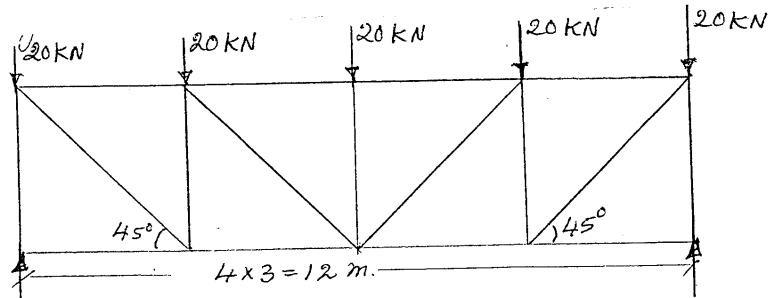*Answer Any Four Questions.*
All Question Carry Equal Marks.

QUESTION 1

The figure below shows the tree body diagram for systems of concurrent forces which are in equilibrium. Determine the magnitude and direction of the unknown forces marked X and Y graphically.
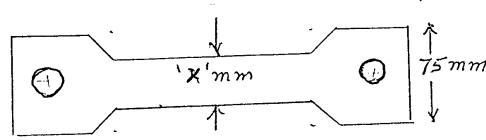

QUESTION 2

Analyse the forces in the members for the truss shown.

QUESTION 3

A tier bar of the shape shown in figure has a uniform thickness of 12 mm and has two holes 20 mm diameter each. Calculate the width 'x' so that the bar is equally strong throughout its length. Calculate the safe pull for the bar if the permissible stress is 150 N/mm^2.

QUESTION 4

Fig. shows the shear force diagram for a loaded beam. Sketch the beam, showing the loading conditions, and calculate the maximum positive and negative bending moments.
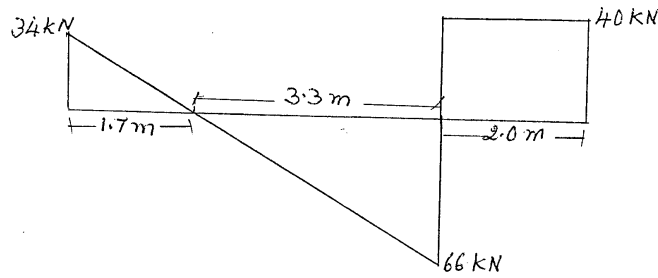
QUESTION 5

In Fig. below the masts are verticle and hinged at their bases. Determine the tension in the rope supporting the weight, the tension in the stays and compression in the masts.