

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF CIVIL AND WATER ENGINEERING
FACULTY OF INDUSTRIAL TECHNOLOGY
BACHELOR OF ENGINEERING (HONOURS) DEGREE
PART II SECOND SEMESTER EXAMINATION- MAY 2008
THEORY OF STRUCTURES– TCW 2203

INSTRUCTIONS

Answer 4 Questions

Time: 3 Hours
Total Marks:100

QUESTION ONE

A simply supported beam of 12m span carrying a uniformly distributed of 2kN/m over the whole span and two concentrated loads 15kN and 25kN at 4m and 7m from the left-hand as shown in Figure 1.0.

Draw the bending moment and shear force diagrams for the beam.

MARKS 25

QUESTION TWO

For the beam in Question One calculate the deflection at mid-span using the Unit Load method.

MARKS 25

QUESTION THREE

A Pratt truss, Figure Two, has 6 bays each of 2m long and 2.4m high.

(A) Check if the truss is statically determinate or indeterminate.

MARKS 5

(B) Calculate the forces carried by each member stating whether the force is tensile or compressive.

MARKS 20

QUESTION FOUR

For the truss in Question Three, calculate the deflection at point C.

The sectional areas, in cm^2 , of the members are shown against members in the figure.

Take Modulus of Elasticity 200kN/mm^2 .

MARKS 25

