

كتابة علمية نظرية

Menoufia University
 Faculty of Engineering, Shebin El-Kom
 Arch. Eng. Department
 First Semester Examination, 2013-2014
 Date of Exam: / 1 / 2014



Subject: Theory of Structure
 Code: CVE227
 Year : Second Year-Arch
 Time Allowed : 3 hours
 Total Marks : 90 marks

Answer the following questions

Clean Sketches and Proper Calculations are strictly required

Marks
 [90 Marks]

Question 1

1- For the shown Beam :

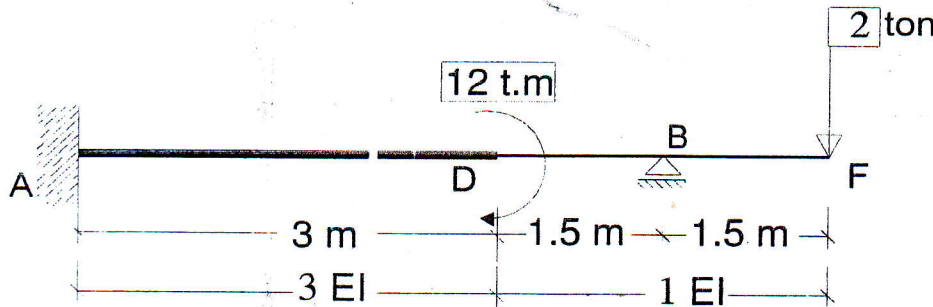
[15]

a) Draw the shear Force Diagram

[7]

b) Draw the Bending Moment Diagram.

[8]



Question 2

2- For the shown Beam :

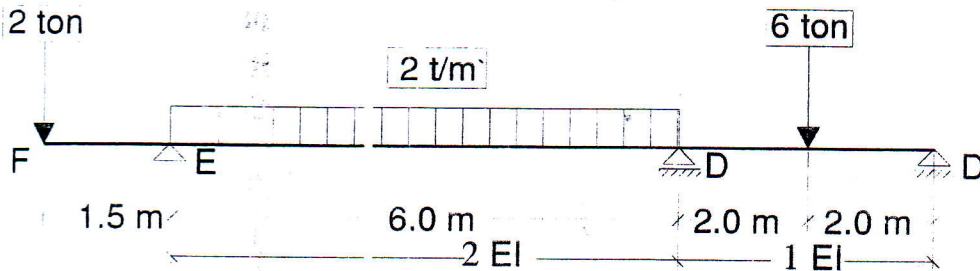
[15]

a) Draw the shear Force Diagram

[7]

b) Draw the Bending Moment Diagram.

[8]

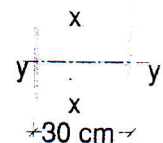
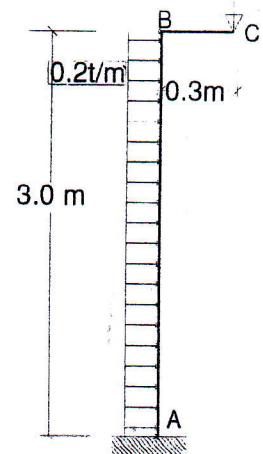


P ton

Question 3 [15 marks]

3- For the shown Structure :

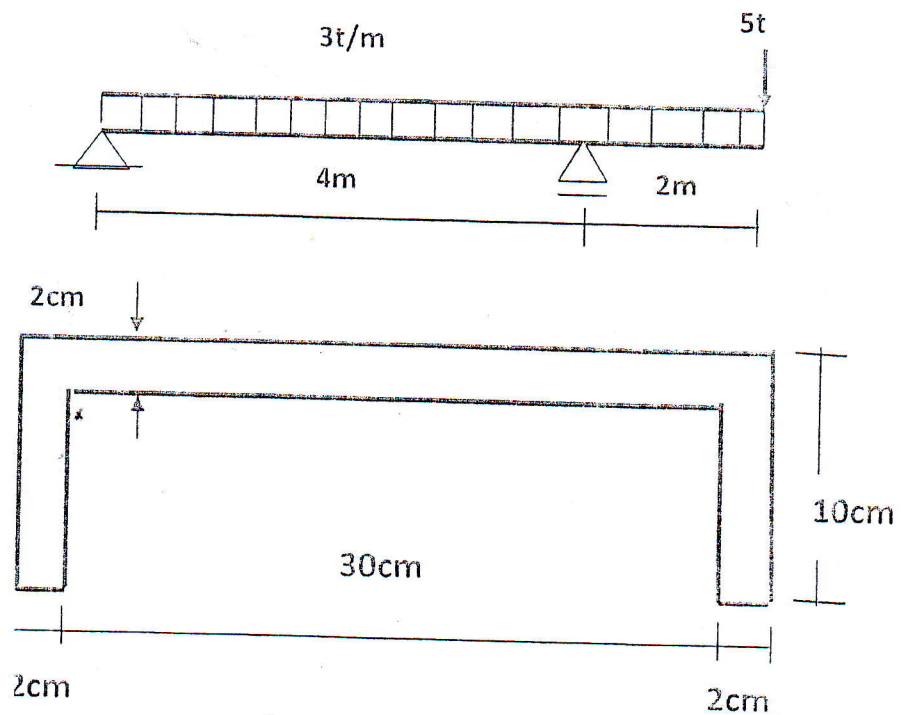
a) Calculate The max. force [P] if use steel [37] section with properties $A=100 \text{ cm}^2$, $I_x=15000 \text{ cm}^4$ & $I_y=1200 \text{ cm}^4$.



Best wish's
 Dr. Mohamed EL-Sabaawy

Question (4): { 15 degrees }

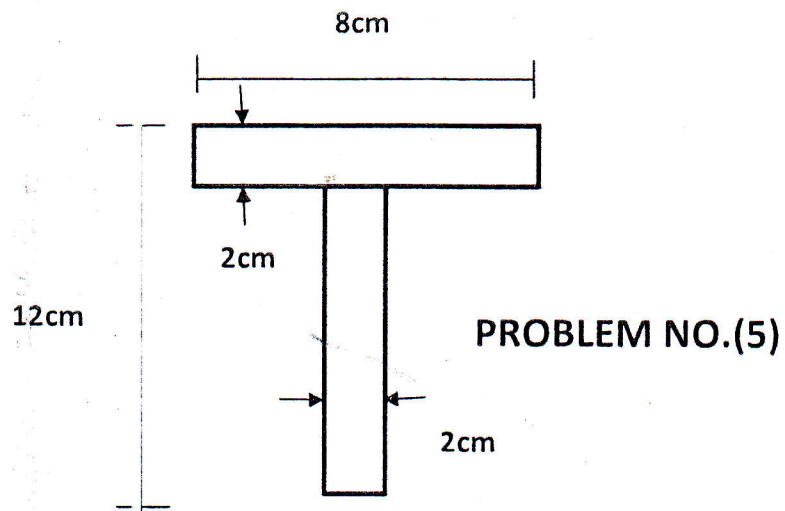
The beam shown has a channel cross section of the given dimensions. Calculate the maximum shear stress and plot the shear stress distribution at the section of maximum shearing force.



PROBLEM NO.(4)

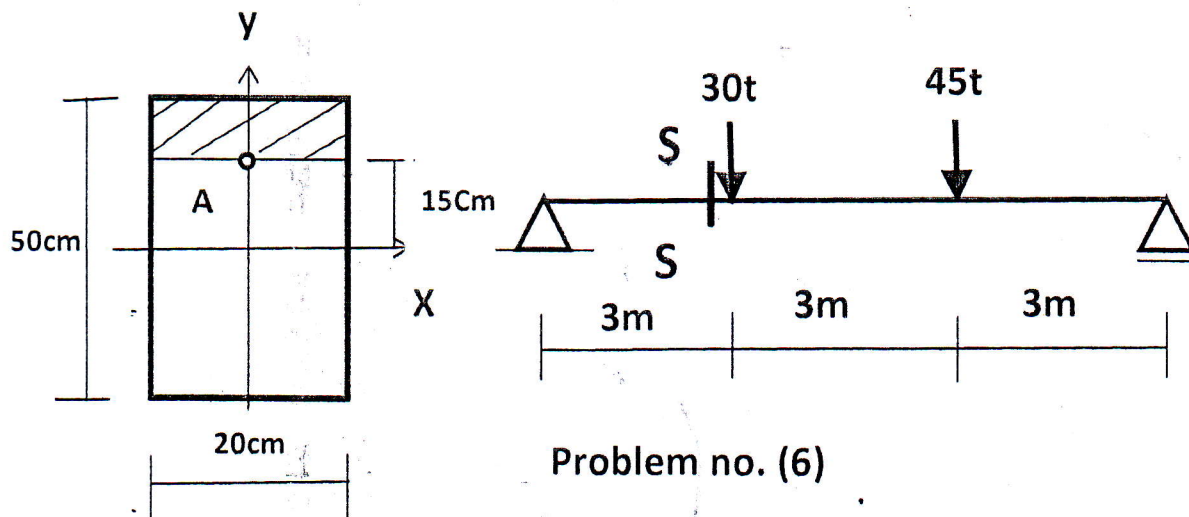
Question (5): { 15 degrees }

The T- shape shown is made of a material having an allowable stress of 2500 Kg/cm^2 . Determine the maximum allowable bending moment and then draw the normal stress distribution along the section, if it subjected to a maximum bending moment of 600 Kg.m



Question (6): { 15 de grees }

The simply supported beam shown has the given cross section, Determine the normal stress , shear stress , principal normal stresses and the maximum shear stress at point A in section S-S.



With my best wishes

Dr . Alaa Atwa