MANSOURA UNIVERSITY — FIRST YEAR ARCH.
FACULTY OF ENGINEERING — FINAL TERM EXAM. — YEAR.2013-2014
STRUCTURAL ENG. DEPT. — THEORY OF STRUCTURES — TIME 3 HOURS

1) Determine the reactions and draw the **N.F., S.F.** and **B.M.Ds**. Of the structures shown in Figs (1-2)

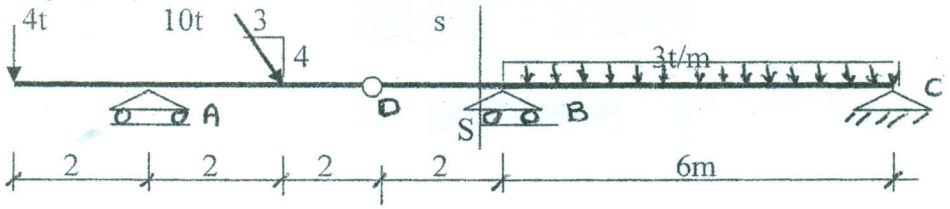

Fig. (1)

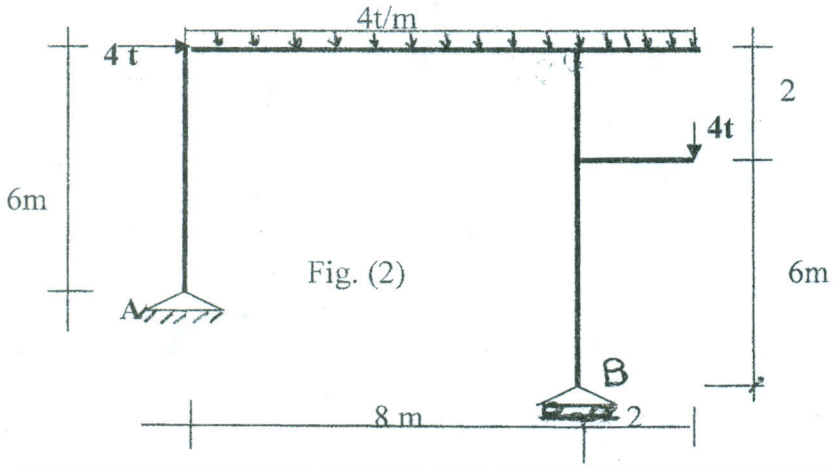

Fig. (2)

2) Find graphically the forces in all the truss members and check analytically the forces in the marked members shown in Fig. (3).

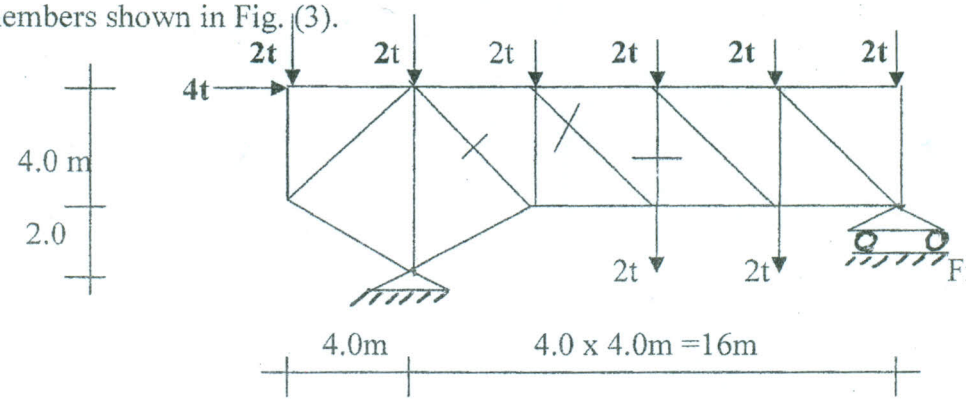

Fig.(3)

3) The beam shown in Fig. (1) Has an **I** cross-section of the given dimensions in fig. (4).
a) Calculate the maximum **shearing stress** and plot the shear stress at the section of **maximum shearing force.**
b) Plot the **normal stress** distribution over cross- section in fig. (4) At the section S-S

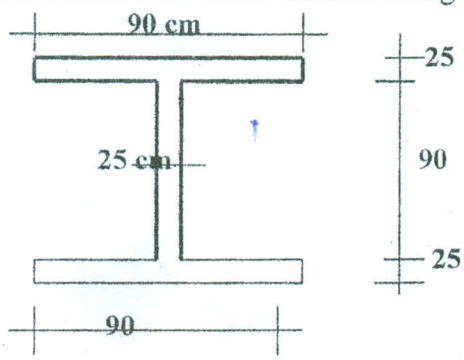

Fig. (4).

Good luck
Dr.: NABIL BASIT