ANSWER AS MUCH AS YOU CAN   رجاء الحل بترتيب الأسئلة وتنظيم الحل مهم جدا

(ILOS a-1, a-3, b-1, b-2, c-2, c-6)

For all questions (E =20000000 t/m2, I = 6.75*10⁻⁴ m⁴ , A= 0.15 m²).

Q1) For structure shown in Figure 1 and using <u>Virtual Work Method</u>. Find the horizontal and vertical deflections at points c and e and rotations at points a and b. then, Draw the elastic line.
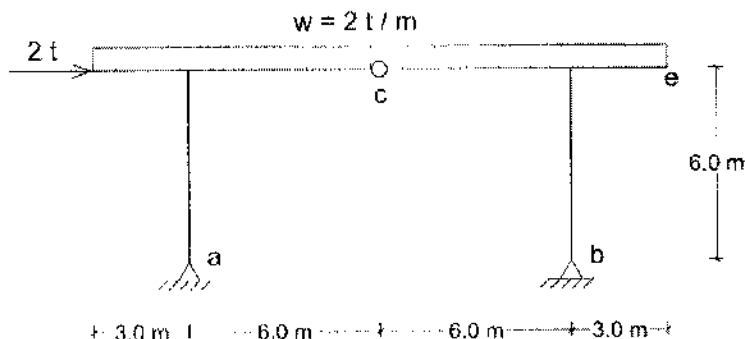
Figure 1

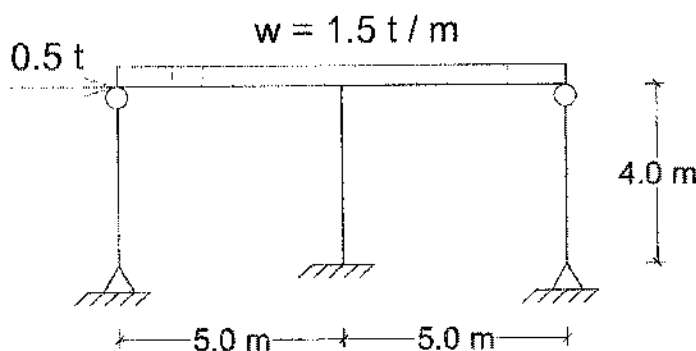**Q2)** For structure shown in Figure 2 and using <u>Consistent Deformation Method</u>. Draw S.F.D, N.F.D and B.M.D

Figure 2

Q3) For structure shown in Figure 3 and using method of <u>Three Moments Equation</u>, Draw B.M.D.
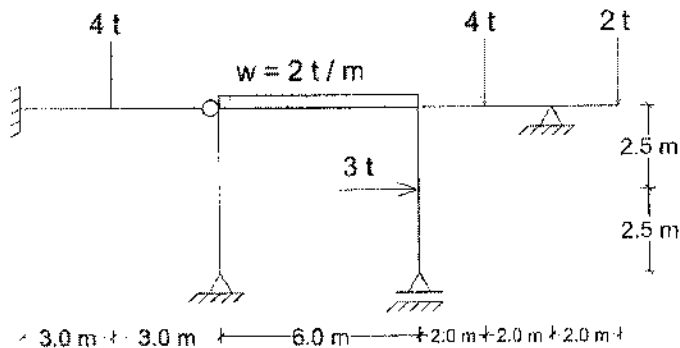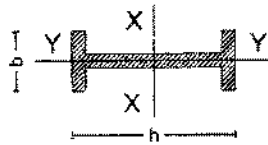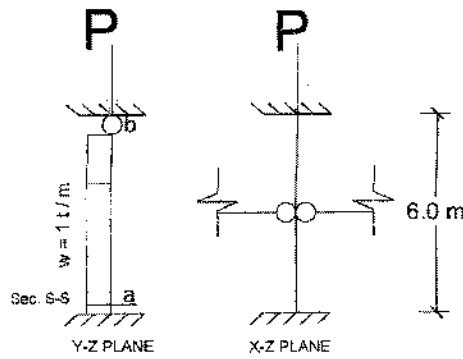
Figure 3

Q4) Assuming steel type 37, Find the value of load P such that the maximum allowable stresses in the column ab at the marked section should not be exceeded (Take the effect of buckling into consideration).

BFIB NO. 28	
h = 28 cm	$I_x = 20720$ cm^4
b = 28 cm	$I_y = 7320$ cm^4
A=144 cm^2	

K The least of	$0.7+0.05(G_A+G_B)$
	$0.85+0.05$ G_{min}

$$K \leq 1.0$$

Sec. S-S

Y-Z PLANE   X-Z PLANE

With my best wishes
DR. Galal elsamak