Answer the following questions:

1-Find The reactions and the force in the link member ac and ad for the given simple
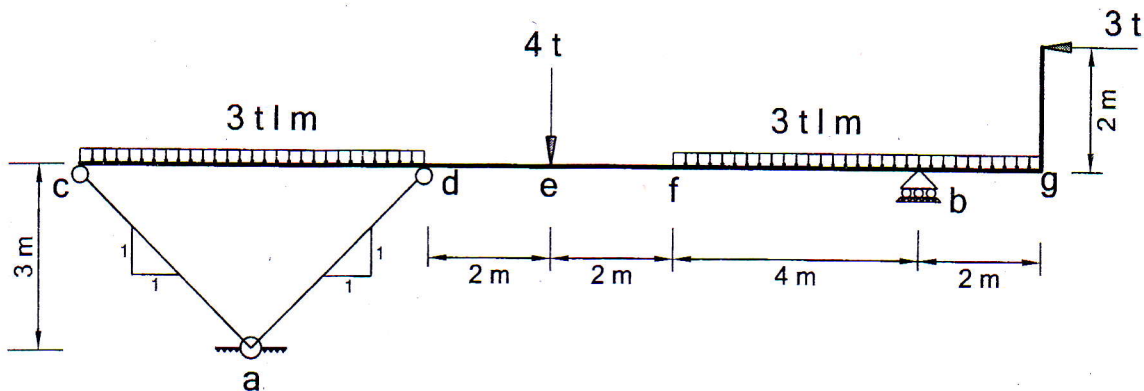 beam shown in Fig.(1), and then draw the N.F., S.F., and B.M. diagrams.

(20 marks)

Fig. (1)

2 –The following continuous beam shown in Fig.(2) is simply supported at a and b and
  fixed at c and it is intermediate hinge at d.
  a)-Prove that the beam is statically indeterminate,
  b)-If the bending moment at point e is given by (Me = +4 t.m), determine the
  reactions at supports,
  c)-Draw the corresponding S.F., and B.M. diagrams.   **(25 marks)**
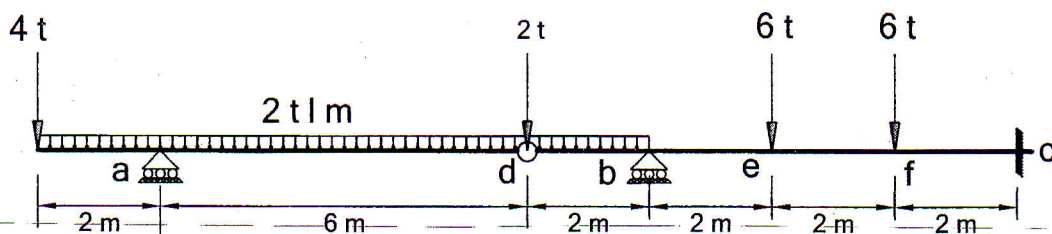

Fig. (2)

3-For the given three hinged frame abc shown in Fig.(3), Find the reactions at
  supported and then draw the N.F., S.F., and B.M. diagrams.
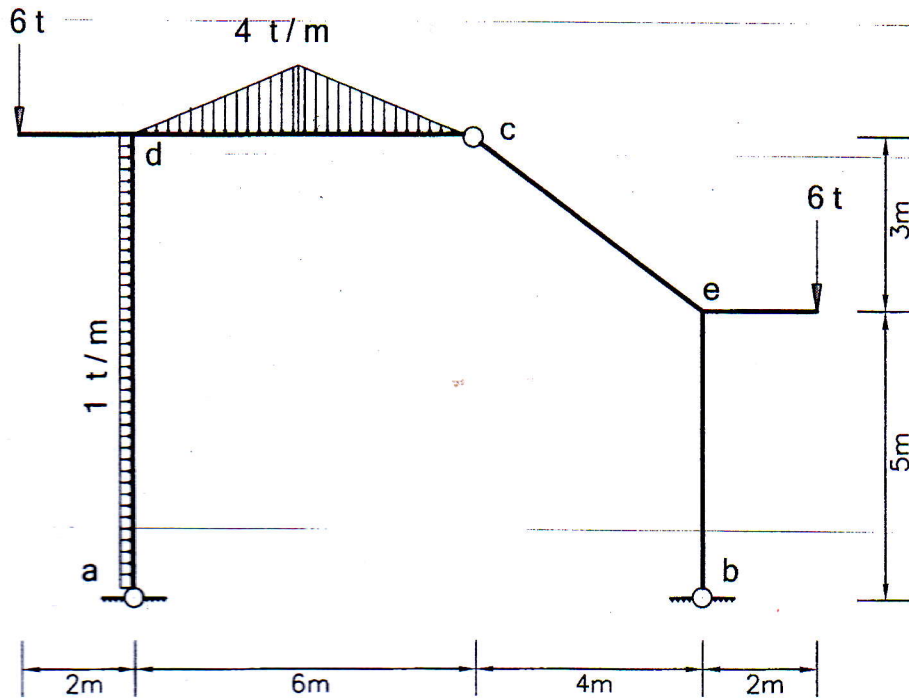
(35 marks)

6 t

4 t/m

d

c

6 t

3m

1 t/m

5m

a

b

2m   6m   4m   2m

e

Fig. (3)

4–A three-hinged parabolic arch is loaded as shown in Fig.(4), find the reactions and the straining actions N, Q, and M. at points a, d. and c.
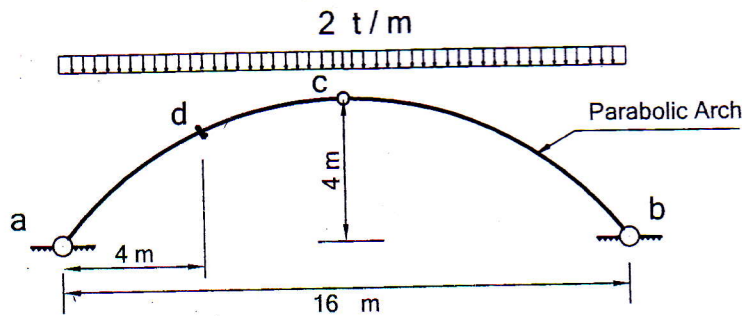
(15 marks)

2 t/m

c

d

Parabolic Arch

4 m

a

b

4 m

16 m

Fig. (4)

5–Find the forces for the given truss shown in Fig.(5) in the marked members from 1 to 10 only, and it is necessary put and write the results in the box table.
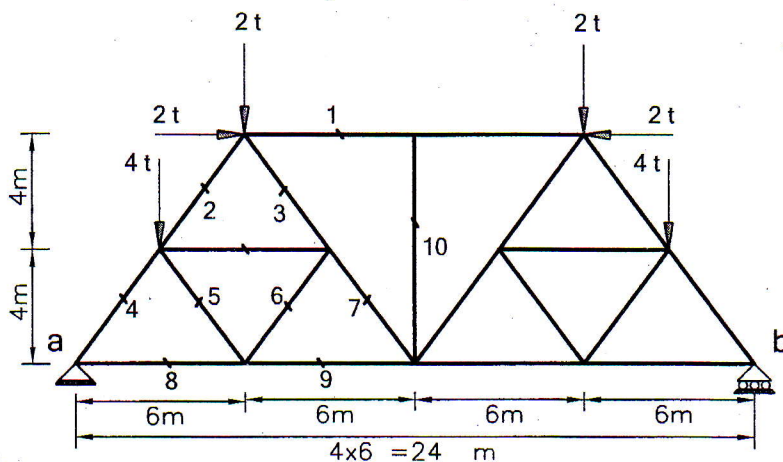
(25 marks)

2 t

2 t

2 t

1

2 t

4 t

4 t

4m

2

3

10

4m

4

5

6

7

a

b

8

9

6m   6m   6m   6m

4x6 =24 m

Fig. (5)

My Best Wishes.   **Dr. Mohsen A. Mousa**