Menoufia University Faculty of Engineering Civil Eng. Department Academic Year: 2018-2019 Final Exam.		Subject: Theory of Structures (1) Course Code: CVE102 Year: 1[st Civil] Time Allowed: 3 hours Date: 10/6/2019

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Read carefully the given data and solve all questions. (Total Marks:[120])

Question (1)   [20]

For the statically indeterminate beam shown in **Fig. (1)**, draw **the N.F., S.F., and B.M. diagrams if the** force in the link member (**Fde = + 8 ton)** and then, find the value of max. positive bending moment.
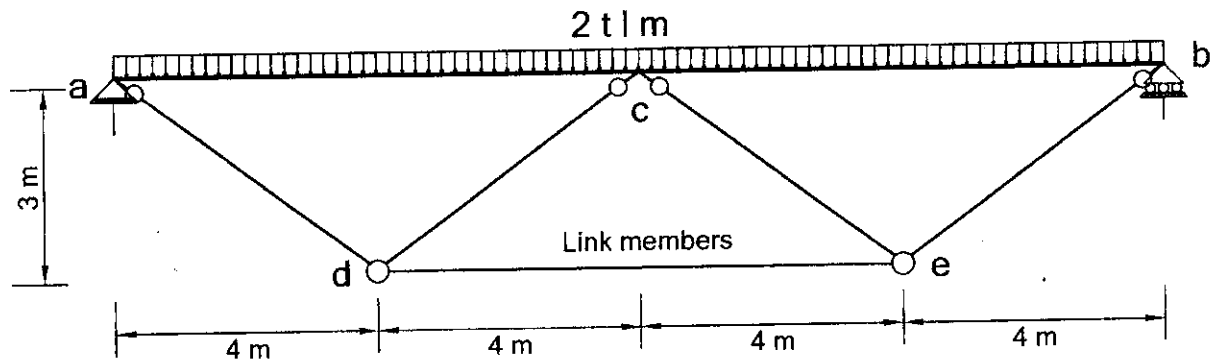

Fig. (1)

Question (2)   [20]

For the statically indeterminate beam shown in Fig. (2), draw **the S.F., and B.M.** diagrams if the **(Ma = -13.2 m.t. and Yc = 9 ton)** and then, find the value of max. positive bending moment in span bc.
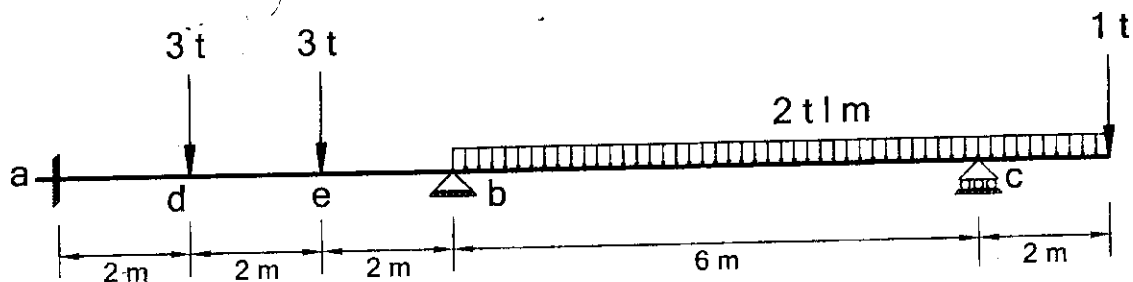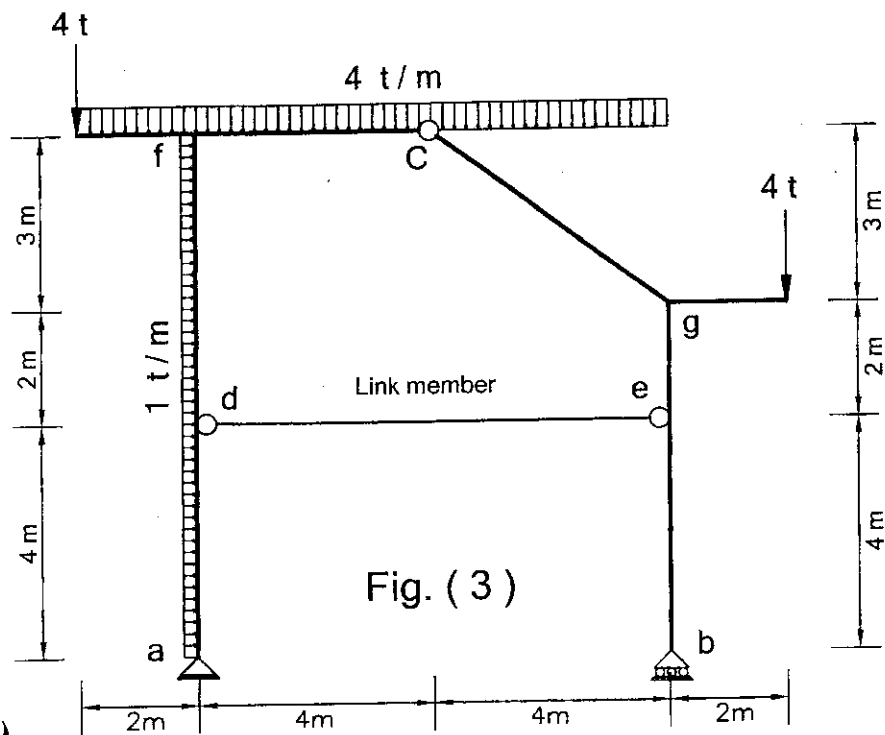

Fig. (2)

Question (3)   [35]

The frame shown in Fig. (3) is hinged at a and simply supported at b and it has intermediate hinge at c. Find the external reactions at a and b and internal force in the link member de and ,then draw the **N.F., S.F. and B.M. diagrams.**

Fig. (3)

Question (4)

For the given K- truss shown in Fig. (4), Calculate the forces in **the marked members (from 1 to 8)** and, then write the results in the box table.
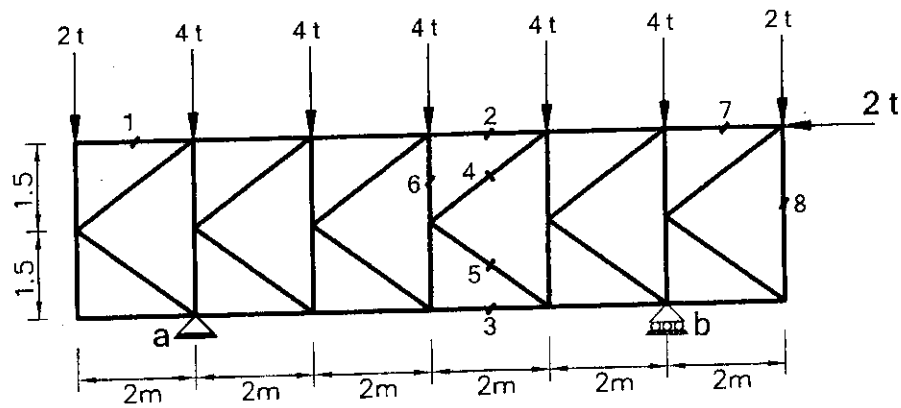

Fig. (4)

[25]

Question (5)

[20]

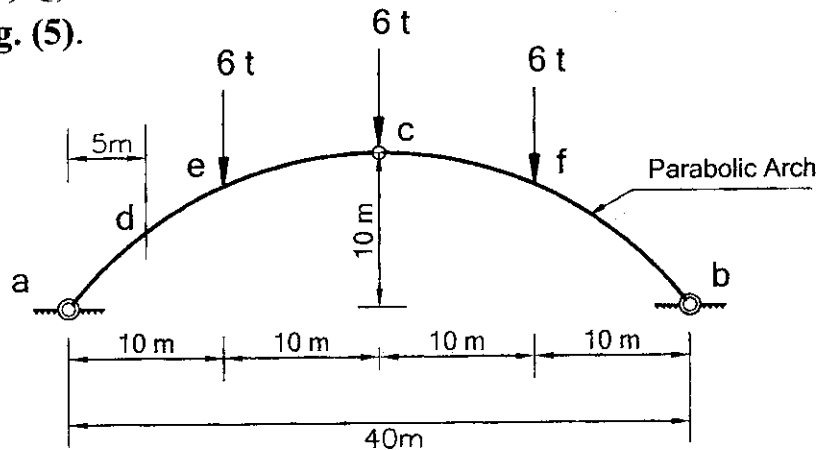Find the straining actions **N, Q, and M** at points a, d, e, and c of the three –hinged parabolic arch shown in **Fig. (5)**.

Fig. (5)

My Best Wishes.   Dr. Mohsen A. Mousa