Ministry of Higher Education
Giza Higher Institute of Engineering & Technology
Civil Engineering Department
Course Name: **Theory of Structures (1)**
Course Code : **CIV 201**   Date : **28 / 12 / 2019**

Academic Year : **2019/2020**
Semester :   **First**
Level :   **2ⁿᵈ Level**
Time :   3 **Hours**
Examiner: *Dr. M. Abdel-Kader*

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Final Exam

Total Marks: **60**   No. of Questions:**3** (Attempt all questions)

Question (1): (20 Marks)

For the structures shown in **Fig. 1**, determine the reactions
at the supports *A* and *B*.

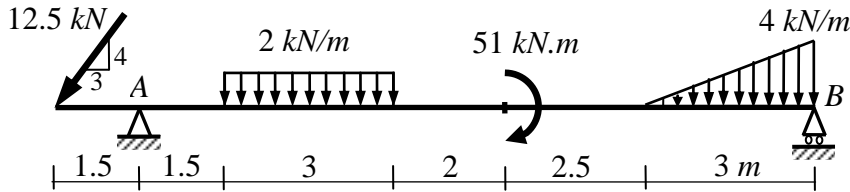*Note:* In your answer sheet, draw the final reactions at the supports.
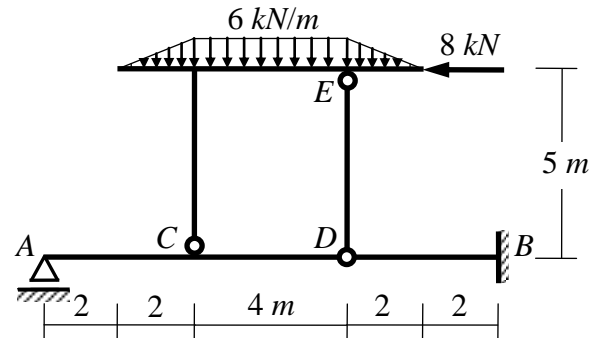

Fig. 1a

Fig. 1b

Question (2): (20 Marks)

For the structures shown in **Fig. 2**, draw the normal force, shear force and bending moment diagrams.
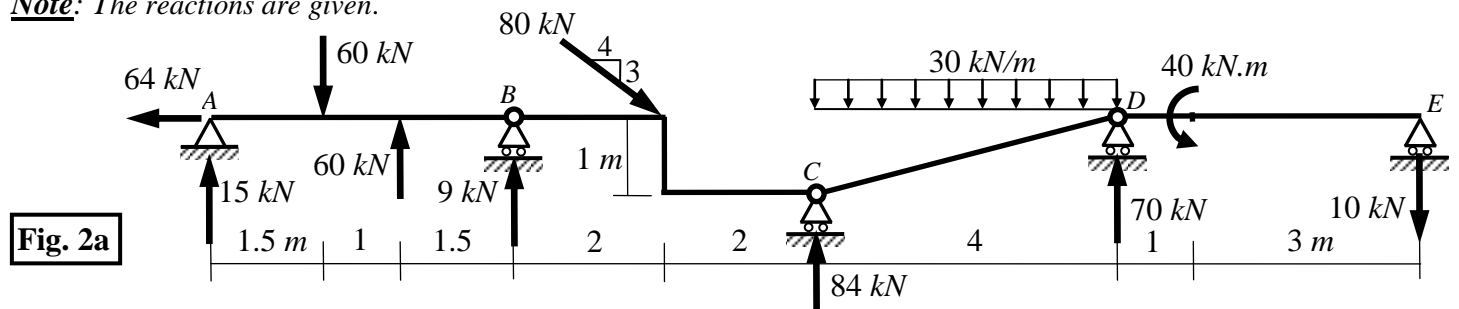
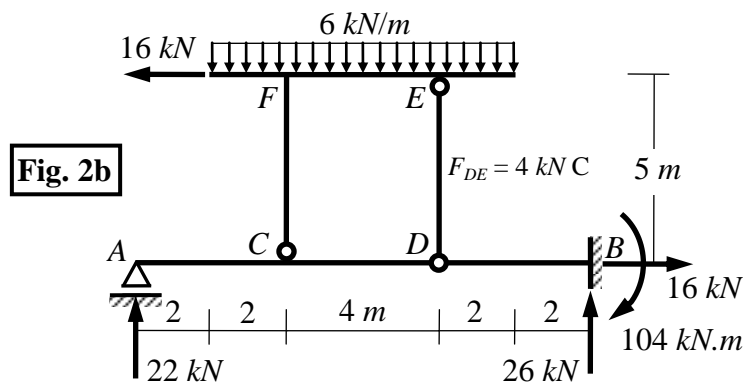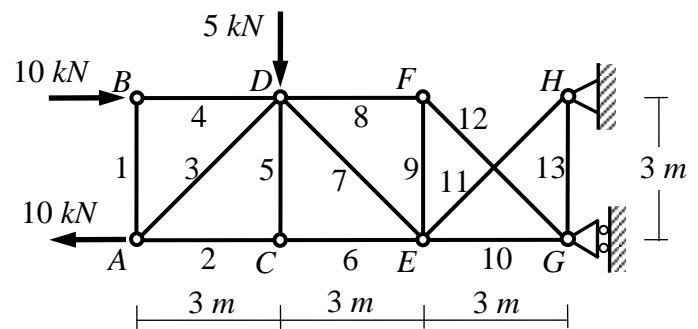*Note*: The reactions are given.

Fig. 2a

Fig. 2b

Fig. 3

Question (3): (20 Marks)

(a) For the truss shown in **Fig. 3**:
   (i) Determine the reactions at the supports.
   (ii) Using the **method of joints**, determine the forces in all truss members. *In your answer sheet, draw the truss and put the force magnitude and the indication (T or C) on each member.*
   (iii) Using the **method of sections**, determine the force in member 8 (*DF*).

(b) Determine whether each of the shown structures is stable or unstable. If stable, determine whether it is statically determinate or indeterminate. If statically indeterminate, determine the degree of indeterminacy.

(1)   (2)   (3)   (4)   (5)

With my best wishes
Dr. M. Abdel-Kader