Ministry of Higher Education Giza Higher Institute for Eng. & Tech. Civil Engineering Department Course Name: **Theory of Structures (1)** Course Code : **CIV 201**



Academic Year : 2014-2015 Semester : First Level : Second Time : 3 Hours Date : 4/1/2015 Examiner: Dr. M. Abdel-Kader

First Semester Final Exam

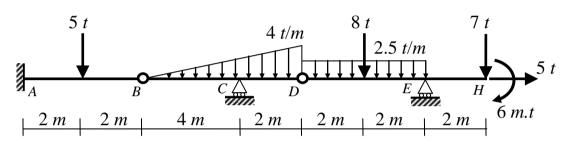
- Attempt all questions.

- The Exam consists of **3** questions in **2** pages.

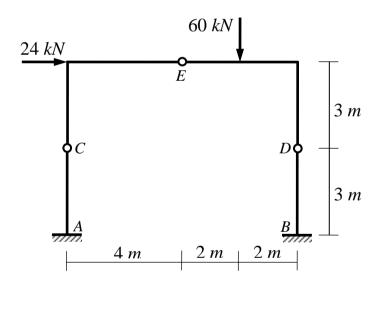
- Maximum grade is <u>60 Marks</u>.

Question (1): (20 Marks)

(a) For the shown beam, determine the reactions at the supports *A*, *C* and *E*. <u>Note</u>: In your answer sheet, draw the final reactions (direction and magnitude) on the beam.



- (b) For the shown frame, determine the reactions at the supports *A* and *B*.
 - <u>Note</u>: In your answer sheet, draw the final reactions (direction and magnitude) on the frame.



50 kN 25 kN Question (2): (20 Marks) 50 kN.m 20 kN/m(a) For the shown beam, draw the normal force, a shear force and bending 70 kN 65 kNmoment diagrams. 2 2 4 m 2

<u>Note</u>: <u>Only</u> the vertical reactions are given.

<u>Please turn over</u>

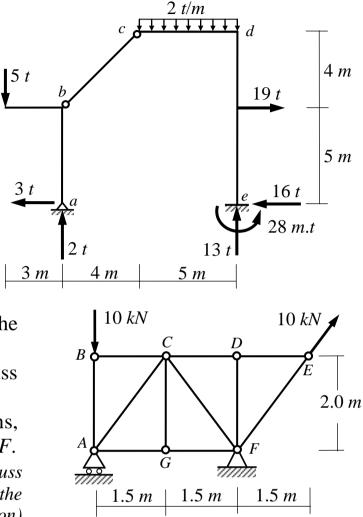
Ministry of Higher Education Giza Higher Institute for Eng. & Tech. Civil Engineering Department Course Name: **Theory of Structures (1)** Course Code : **CIV 201**



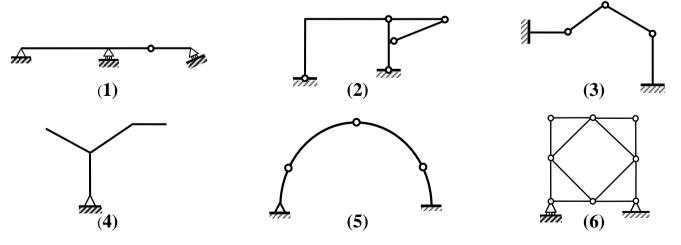
Academic Year : 2014-2015 Semester : First Level : Second Time : 3 Hours Date : 4/1/2015 Examiner: Dr. M. Abdel-Kader

(b) For the shown frame, draw the normal force, shear force and bending moment diagrams.

Note: The reactions are given.



- Question (3): (20 Marks)
- (a) For the shown truss:
 - (i) Determine the reactions at the supports *A* and *F*.
 - (ii) Determine the forces in all truss members.
 - (iii) Using the method of sections, determine the force in member *CF*.
 - **Note:** In your answer sheet, draw the truss and put the force magnitude and the indication (Tension or Compression) on each member.
- (b) Determine whether each of the shown structures is stable or unstable. If stable, determine whether it is statically determinate or indeterminate.



With my best wishes Dr. M. Abdel-Kader