King Mongkut's University of Technology Thonburi

Midterm Examination
Semester 2 Academic Year 2012

CVE 237: Structural Analysis I

Date: 6th March 2013 Time 13:00 – 16:00

Instructions :

1. The exam has **4** questions in **10** pages. Total points are **40** points with each question not of equal points.
2. Read the questions carefully and strictly follow instruction.
3. Textbooks and written materials **are not allowed** in the examination room.
4. A calculator is allowed.
5. Write your name on every page.
6. Perform your work in the examination paper.

Examiner: Dr. Aphinat Ashakul
Tel. 02-470-9140

This examination paper has been approved by the Department of Civil Engineering

Professor Dr. Chai Jaturapitakkul
Head of the Civil Engineering Department

Student Name & I.D. _____

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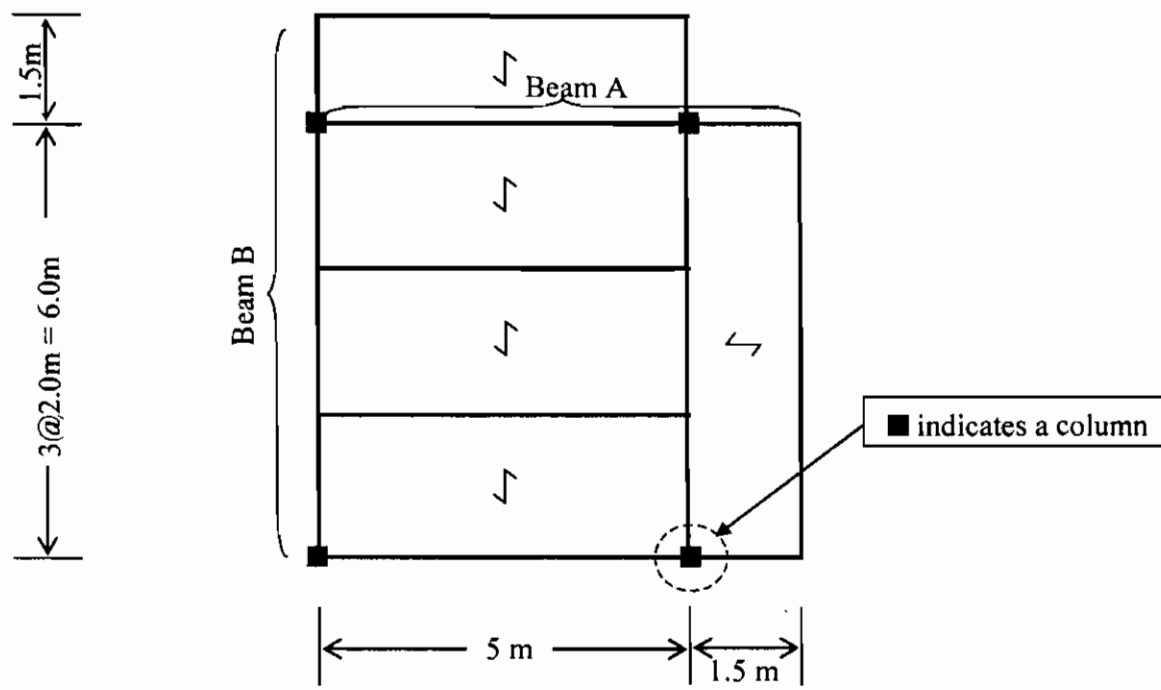
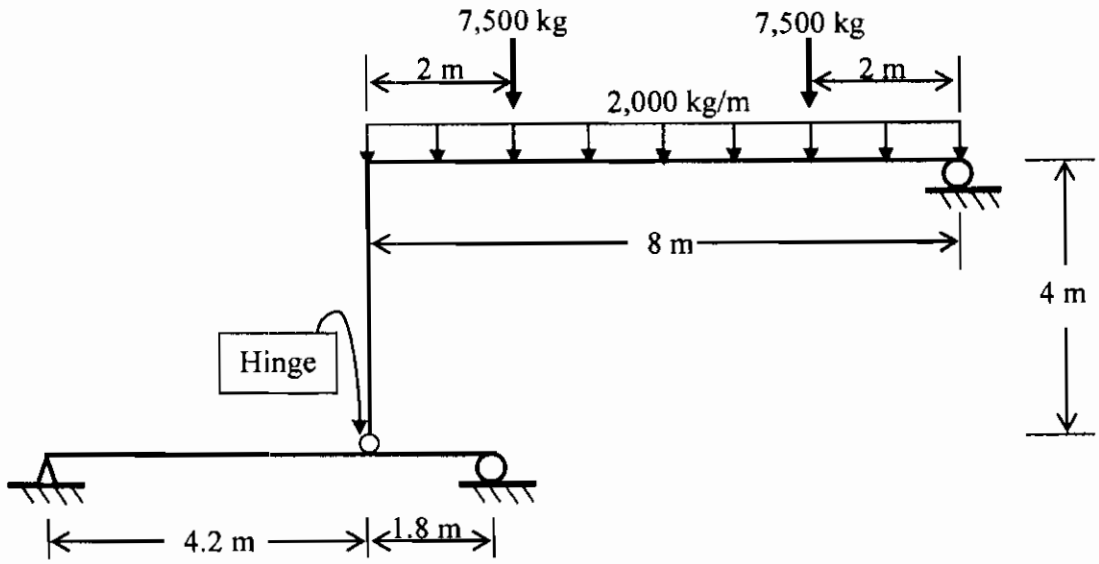
1. Draw shear force and bending moment diagrams of Beams A and B shown. The total load that the floor has to carry is 1,200 kg/m^2, while the weight of the beam is 300 kg/m. A complete shear force diagram should include locations where shear is zero; and a complete bending moment diagram should include values for max. positive and negative moments including its locations, and locations of points of inflection. **(16 Points)**



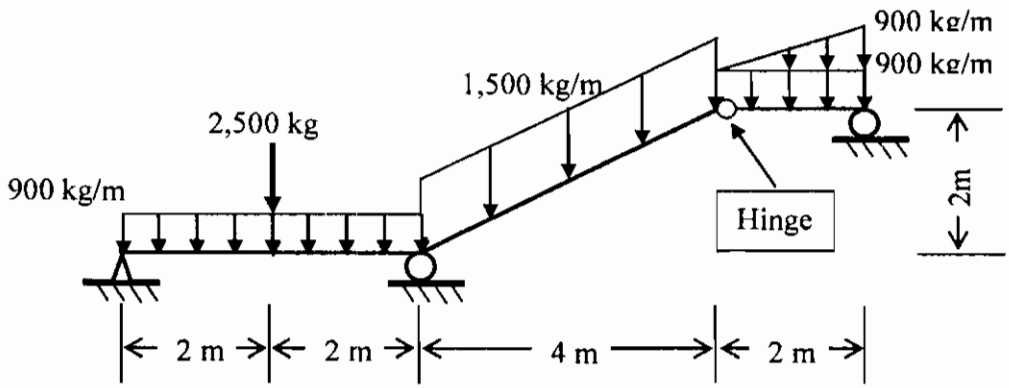
Student Name & I.D._____

2. Draw shear force and bending moment diagrams of the structure shown. A complete shear force diagram should include locations where shear is zero; and a complete bending moment diagram should include values for max. positive and negative moments including its locations, and locations of points of inflection. (**6 Points**)



Student Name & I.D._____

3. Draw Shear Force and Bending Moment Diagram of the frame shown. A complete shear force diagram should include locations where shear is zero; and a complete bending moment diagram should include values for max. positive and negative moments including its locations, and locations of points of inflection. **(10 Points)**



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4. Calculate magnitude of the force in members **a** through **h** of the trusses shown. Also indicate whether the force is tension or compression. **(8 Points)**