Roll No:.....

National Institute of Technology Delhi

Name of the Examination: Mid-Sem. B. Tech. (February-March 2018)

Branch: ECE/EEE
Title of the Course: Engineering Mechanics

Semester: II
Course Code: MEL102

Time: 2 Hours
Note: Use of calculator is permitted

Maximum Marks: 25

Q. 1. Define Statics and Dynamics? (2)

Q. 2. Write the difference between kinematics and kinetics. (2)

Q. 3. Determine the x and y components of each of the forces shown (Fig. (a)). (4)

Q. 4. A fixed crane has a mass of 1000 kg and is used to lift a 2400 kg crate. It is held in a place by a pin at A and a rocker at B. The center of gravity of crane is located at G. Determine the components of reactions at A and B. (5)

Q. 5. A man raises a 10-kg joist, of length 4 m, by pulling on a rope (Fig. (c)). Find the tension T in the rope and the reaction at A. (5)

Q. 6. Determine the force in each member of the Fink roof truss shown (Fig. (d)). State whether each member is in tension or compression. (7)

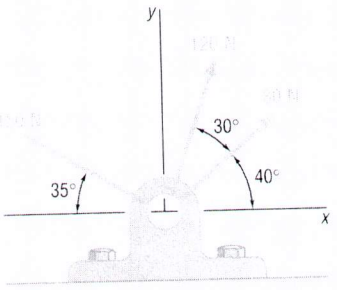

Fig. (a)

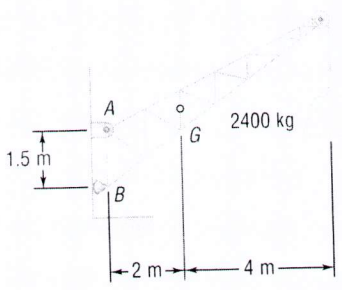

Fig. (b)

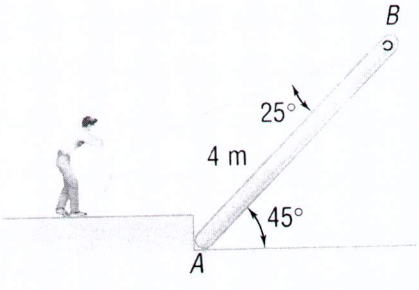

Fig. (c)

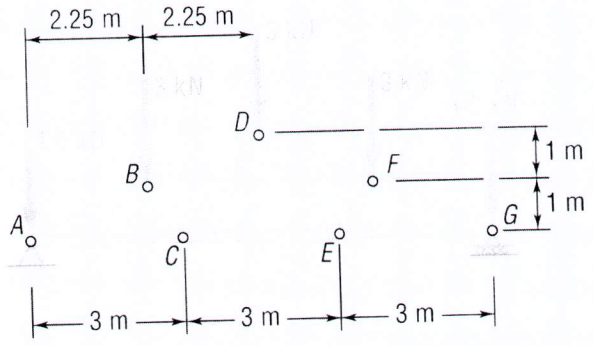

Fig. (d)