Structure I

Maximum time allowed: 90 minutes

Mid-term exam (First semester)

1. Determine the resultant **R** of the three tension forces acting on the eye bolt. Find the magnitude of **R** and the angle θx which **R** makes with the positive *x*-axis. (see Figure 1) 40 Marks
2. Determine the minimum cylinder mass *m1* required to cause loss of contact at A (the total mass of the bar is *m*). (see Figure 2) 20 Marks
3. Calculate the forces in members CF, CG, and EF of the loaded truss. (see Figure 3)40 Marks



Figure 1



Figure 2



Figure 3

Notes: 1. Electronic calculators may be used

2. Answer ALL questions

**END OF EXAMINATION PAPER**

1.

3.

