# College of Engineering & Technology
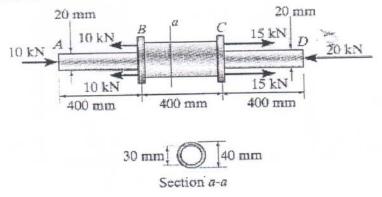
Department: Mechanical Engineering   Marks: 15
Lecturer: Dr. Rola Afify            Time: 2:00 – 2:30
Course Code: ME276               Date: 24/12/2014

Name:                                           R.N.:

**Answer the following questions:**
## Question one (6 marks)

A steel column is 3 m long and 0.4 m diameter. It carries a lad of 50 MN. Given that the modulus of elasticity is 200 GPa, calculate the compressive stress and strain and determine how much the column is compressed.

## Question two (9 marks)

Segments *AB* and *CD* of the assembly shown in Figure 5 are solid circular rods and segment *BC* is a tube. If the assembly is made of aluminum of $E = 70$ GPa, determine the displacement of end *D* with respect to end *A*.



Section *a-a*

**Good Luck**
*Dr. Rola Afify*