King Fahd University of Petroleum & Minerals
DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

CE 203 STRUCTURAL MECHANICS I (Section 2)

Second Semester 1435 / 2014 (132)

Name:_____
ID #: _____

Quiz # 6

Score ____
10

Rewrite the solution of the problem below from the HW that you just did (without looking at your solution).

The two shafts are made of A-36 steel. Each has a diameter of 25 mm, and they are supported by bearings at A, B, and C, which allow free rotation. If the support at D is fixed, determine the angle of twist of end B when the torques are applied to the assembly as shown.

$$\mathbf{J = \frac{\pi}{2} r^4} \quad ; \quad \mathbf{G = 75\ GPa}$$

$$\boldsymbol{\varphi = \frac{TL}{JG}}$$