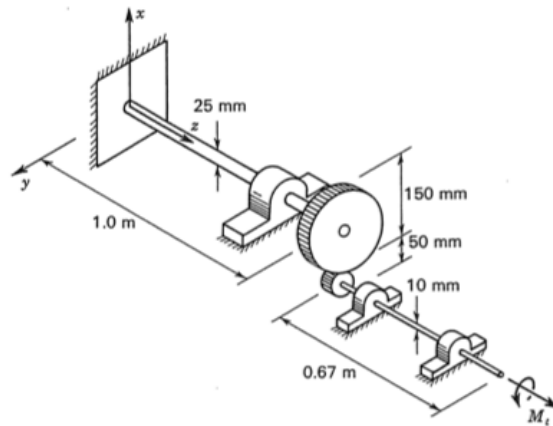**Name:** _____ **Roll no.** _____

Department of Aerospace Engineering, Indian Institute of Technology, Madras.

AS 2010: Basic strength of materials. Quiz 9

1. For the assembly shown, determine the maximum torque M_t that may be applied before the shear stress of 275 MPa is reached in either shaft. The shafts are made of steel, with $G = 70$ GPa.

Name: _____ Roll no. _____
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AS 2010: Basic strength of materials. Quiz 9

2. A couple of 70 N-m is applied to a 25 mm diameter aluminium alloy ($G = 27$ GPa) shaft as shown. The ends A and C of the shaft are built in and prevented from rotating. What is the angle through which the central cross-section of the shaft at O rotates?

(a)