TOBB EKONOMİ VE TEKNOLOJİ ÜNİVERSİTESİ

MAK 206 Strength of Materials – 2013 Spring

QUIZ 3

5 January 2013 Ad, Soyad: _____

Doç. Dr. M. Ali Güler No: _____

Problem: The two circular rod segments, one of aluminum and the other of copper, are fixed to the rigid wall such that there is a gap of 0.3 mm. between them when T_1 = 20 ^oC. Each rod has a diameter of 30 mm.

a) What larger temperature T_2 is required in order to just close the gap?

b) Determine the average normal stress in each rod if T_2 =160 ^oC.

$\alpha_{al} = 24*(10^{-6})/^oC$, E_{al} = 70 GPa , $\alpha_{cu} = 17*(10^{-6})/^oC$, E_{cu} = 126 GPa