Grading Comments on TAM 202 HW # 10, April 11, 2001

(1) Total pts — 10 pts (2 pts for each)

(2) Common Errors:

① Problem 3.6b : To find the maximum shear stress, one need to find the torque T_{CD} in part CD. T_{CD} can be determined by FBD of ABC or CDE.

② Problem 3.38, The required diameter should be determined by checking both the requirement of ϕ_A and T_{all}! Since pully D is held fixed, $\phi_D = 0$. The procedure of calculating required d by $\phi_A \leq 7.5°$ is the same as that of sample problem 3.4 in the book. In other words, $T_D = \frac{5}{2} T_A$ and it can be shown by FBDs of Gear B and C, AB and CD. If required T is 12 ksi for both shafts, then the required diameter is determined by shaft CD since T_{CD} is bigger! Comparing d obtained by ϕ_A and by T_{all}, one will find the larger d will satisfy both requirements!