Answer Tutorial 5 - Chapter 1: Mechanics of material

Problem No.	Answers	Problem No.	Answer
01	a) 47.75 MPa b) 66.31 MPa c) 10.71 Mpa d) 0.92 MPa e) 52.08 MPa	06	d1=22.6 mm d2=16 mm
02	a) 27.6 mm b) 62 mm c) 34.3 mm	07	Normal stress=0.489 MPa Shear stress= 0.489 MPa
03	a) 16.7 mm b) 21.4 mm c) 6 mm	08	168.14 sqmm (**Attempt to solve this question later, after mid-sem**)
04	17.16 kN (Based on tensile failure of rod AB) 11.45 kN (Based on shear failure of pin at B) 9.42 kN (Based on shear failure of pin at C) 15.26 kN (Based on shear failure of pin at D) Largest load 17.16 kN (Ans) (used value: Ultimate normal stress = 375 MPa and Ultimate shear stress = 250 MPa)	09	3.72 kN (Based on shear failure of pin at A) 3.98 kN (Based on shear failure of pin at B) Design load will be 3.72 kN
05	a) 101.56 Mpa b) 21.7 MPa	10	10.25 kN (Based on the shear failure of the pin) 10.31 kN (Based on the shear failure of the wooden block) 42 kN (Based on the tensile failure of the wooden block) Design load will be 10.25 kN