	Alexandria Higher Institute of Engineering & Technology (AIET)	
	Industrial Department	First Year
ME142	Design of Machine elements	Midterm, April, 9, 2013
Examiners:	Dr. Rola Afify and committee	Time: 1.5 hour

Answer the following questions:

Question one (10 marks)
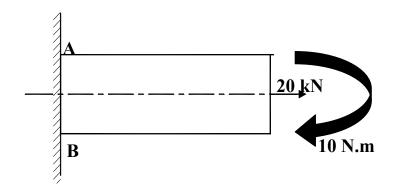
a) Define:-

   i- Machine Design   ii – Stiffness

   iii- Brittlness   iv – Machinability

   v- Resilience

b) A 30 mm diameter rod, shown in figure, is subjected to a force of 20 kN and a moment of 10 N.m. Calculate the stresses at A and B.

Question two (10 marks)

a) What are the general procedures in Machine Design?

b) Draw, using neat sketches, the following:

   1- Elevation and Plan of a cap screw with Fluted socket head

   2- Elevation and Plan of a cap screw with Square head

   3- Elevation of a set screw with Headless head with Full dog point

Good Luck   **1/1**