Course's Name : Strength of Material
Course's Number :12210345
Questions' Number :4
Total Mark :25
Section's Number:1

Palestine Technical University - Kadoorie

second Semester 2015/2016: First Exam

Instructor's Name :Dr. Ihab Assaf

Exam's Period :60 min
Exam's Date :02/04/2014
Form :
Page's Number :4

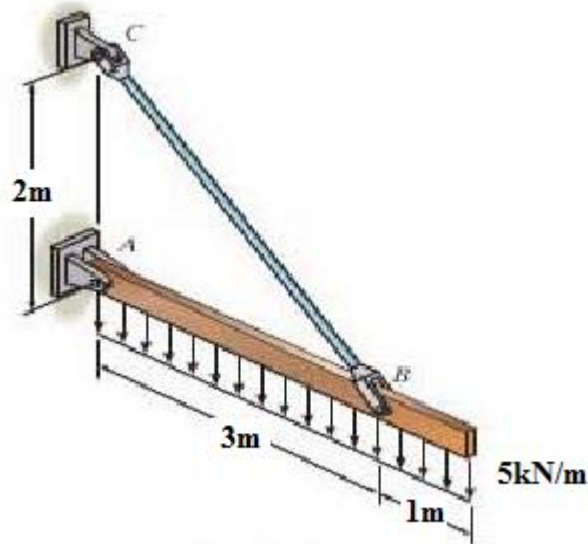### Question #1:   (8 Marks)

For the loaded beam shown, calculate:

1. The tension in cable BC and the reactions at the pinned support at A?

2. The normal stress in cable BC If it diameter is 20mm?

3. The shear stress at bolt A if its diameter is 15mm?

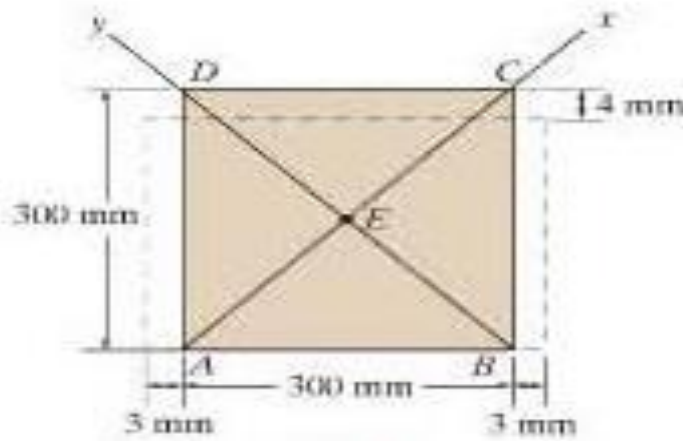4. The diameter of bolt B if the allowable shear stress is 100MPa?

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Question # 2: (6 Marks)

If the square plate shown is deformed into the shape shown, calculate:

1. The normal strain along AB?
2. The normal strain along AC?
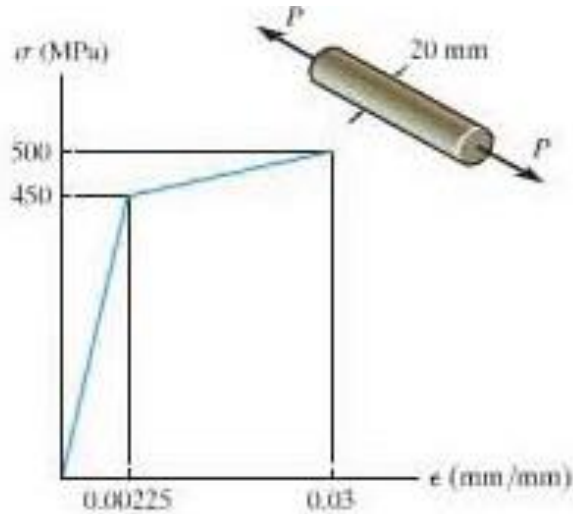3. The shear strain between x and y?

	Palestine Technical University - Kadoorie	
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Question # 3:   (6 Marks)

The material of a 50mm long specimen has the stress strain curve shown. If P=150kN is applied and then released, calculate the permanent deformation of the specimen.

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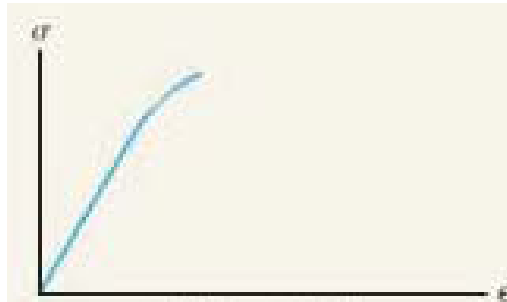## Question # 4:   (5 Marks)

a) For the stress strain curve, indicate the points represent the yield stress, the ultimate stress and the failure stress?
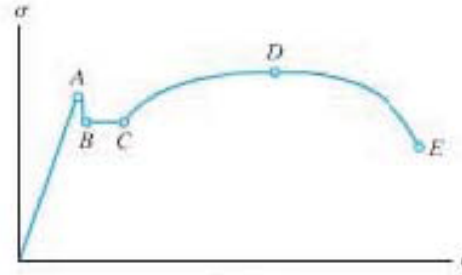
b) State weather this material is ductile or brittle?

c) State weather the stress strain curve for structural and hard steel is true or false?