IQRA NATIONAL UNIVERSITY, PESHAWAR

D E P A R T M E N T   O F   C I V I L   E N G I N E E R I N G
Subject: MOS-II (BS Final-Term Examination (Summer 20))
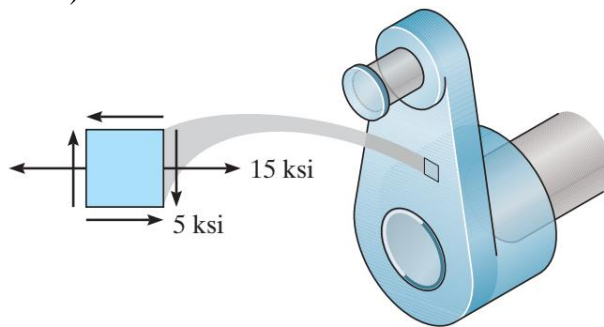**Duration**: 3 hours   **Total Marks:** 50

Q1. (a) Determine principal stress, the maximum in plane shear stress, and average normal stress. Specify orientation of element in each case. (10 marks) (CLO1, CLO3)
(b) Solve part (a) using Mohr's circle.
(Note: Draw Mohr's circle using pencil. Use proper scale while drawing Mohr's Circle and angle etc. should also be accurate) (15 marks) (CLO1, CLO3)

Q2. The point on surface of cylindrical pressure vessel in figure below is subjected to a state of plane stress. Determine the absolute maximum shear stress at the point using concept of Mohr's circle. (15 marks) (CLO1, CLO3)
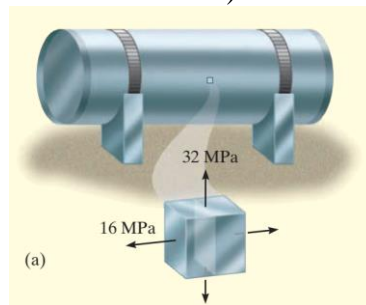
Q3. What are the main stresses responsible for failure of ductile and brittle materials? Name 2 failure theories for ductile materials and 2 for brittle materials. Which failure theory is more applicable on the following materials and why?

(a) Concrete
(b) Steel   (10 Marks) (CLO2)

THE END