



BIRZEIT UNIVERSITY

**Civil Engineering Department**  
**Construction Material Lab (ENCE 215)**  
**Quiz #3**

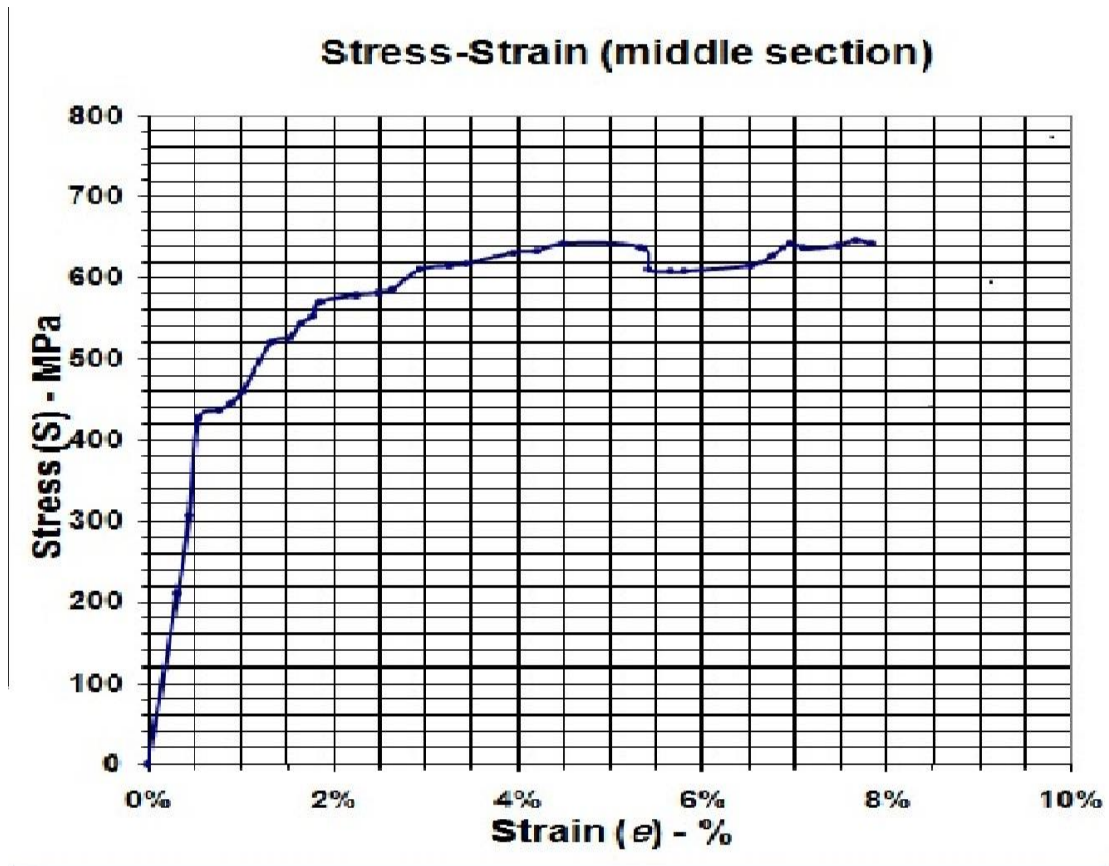
**Student Name:**

**Student ID:**

**Q:1 Fill in the blanks (20 Marks)**

- 1- In Penetration test the specimen was kept in water bath to .....
- 2- In bend re-bend test the steel bar was bent to an angle of.....,then should be put in the oven at temperature ..... With duration..... before re-bend it again.
- 3- The Cleveland Open Cup Tester machine was used in lab to determine .....and..... for the bitumen.
- 4- Flash point can be defined as.....
- 5- Bitumen Grade S-90 means its ductility is.....
- 6- Penetration test used to determine .....of the bitumen
- 7- The design of asphalt mix is carried out using .....method and this mix should achieve some properties such as.....and.....
- 8- In simply supported reinforced concrete beam subjected to point load at mid span, the shear cracks should appear near the..... at an angle about..... While flexure cracks appear near.....at an angle about.....
- 9- As temperature increase the viscosity of bitumen.....
- 10- Yield stress can be defined as.....
- 11- The volume of flask used in viscosity test.....ml
- 12- Stirrups used in reinforced concrete beam in order to.....

**Q3: An axial tension test was performed on steel specimen whose nominal diameter is 14mm, the length of the specimen is 505mm, weight of the specimen is 618g and length of the specimen subjected to tension (placed between jaws of the machine) is 115.7 mm find: (10Marks)**



**Figure (1): axial tension test result**

- 1) Equivalent diameter**
- 2) The elongation of the specimen**
- 3) Find: ultimate stress, yield stress, modulus of elasticity (E)**