



BIRZEIT UNIVERSITY
Civil Engineering Department
Construction Material Lab (ENCE 215)
Quiz #2

Student Name:

Student ID:

Q:1 Fill in the blanks (25 Marks)

- 1- There are two kinds of tests associated with hardened concrete, these are.....such as, and Such as.....
- 2- In ultrasonic test an increase in the velocity of sound waves indicates in the amount of voids and In the strength of concrete.
- 3- Core specimen is submerged in water for not less than hours and its strength must not be less% of design concrete strength to consider that the concrete achieved its strength.
- 4- In ultrasonic test grease is put on the concrete before transducers are placed in order to
- 5- In the rebound hammer experiment, the measured compressive strength of dry cubes will be if it is compared to wet cubes.
- 6- In the core test, the required diameter is
- 7- In the ultrasonic pulse-velocity test, the transducers can be arranged in three ways:
1..... 2..... 3.....
- 8- In the bend and rebend experiment, the specimen was placed after bending it in, at a temperature of
- 9- Workability defined as.....
- 10- In the slump test, the cone was filled in Layers, each layer was compactedblows using rod with dimension oflength, anddiameter.
- 11- There are three shape of slump:..... , and.....
- 12- Compacting factor can be defined as.....
- 13- Modulus of elasticity can be defined as.....

Q2: Answer the following questions (15 Marks)

a) Explain the principle of the rebound hammer test, and what it is used for?

b) Explain Vickers Hardness test.

c) Explain how Vee Bee test can be performed.

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)

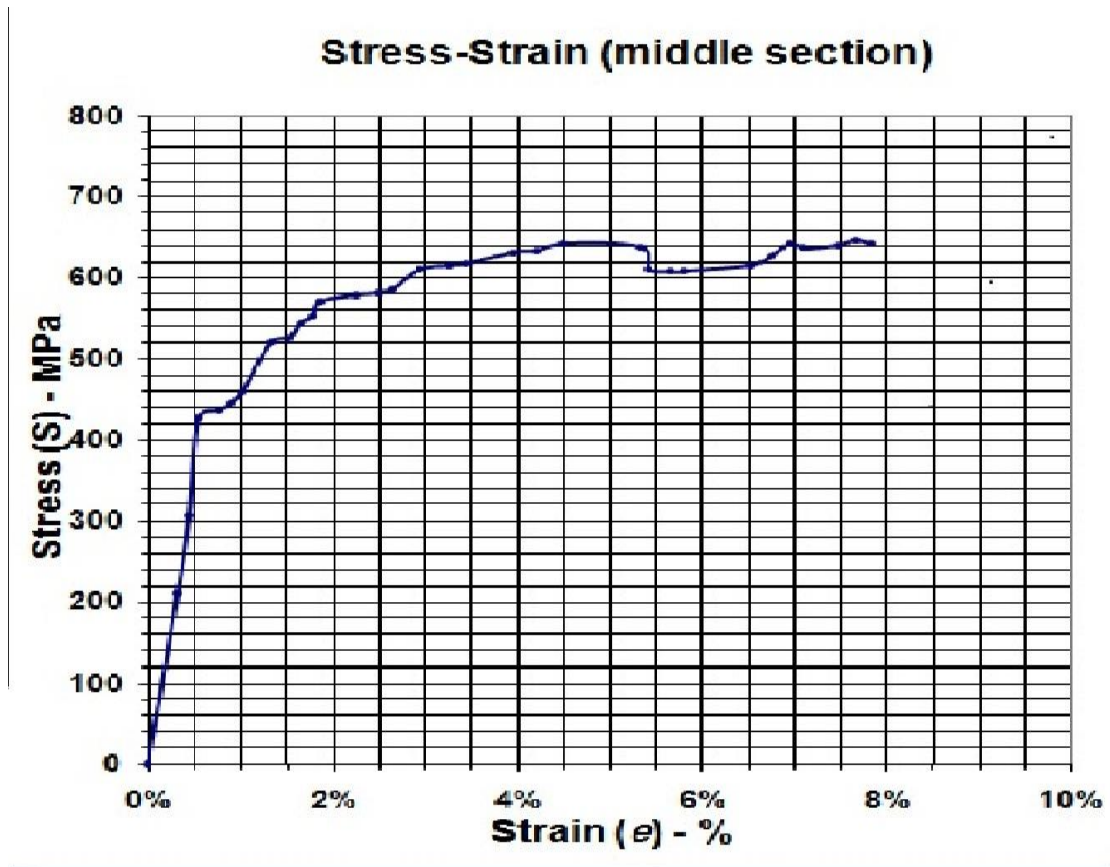


Figure (1): axial tension test result

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