

Course No: EAGD2208	University of Palestine  Applied Engineering & Urban planning MIDTERM EXAM 2nd semester 2012/2013	Student No.: Student Name: Instructor Name: Arch. Shireen Abdelrahman
Course Title: Materials & Construction Technology		
Date: 27/03/2013		
No. of Questions: 5		
Total Grade: 20		
Time: 90 minutes		

First Question	No. of Branches (16)	(7 marks)
Put (T) at the end of the true sentence, (F) at the false sentence.		
1. Iron Oxide is responsible for the gray color of cement		()
2. Polystyrene block is used as a thermal isolator because it couldn't be affected by sun and climate change.		()
3. Aggregates generally occupy about 70% to 80% of the volume of concrete.		()
4. Sea-water is not recommended for reinforced concrete construction.		()
5. Cement mortar consists of cement, water and sand.		()
6. Advantages of high water/cement ratio increase strength and give Lower permeability.		()
7. Aggregate and sand shall have maximum water absorption of 3%.		()
8. Le Chatelier flask is used to test the cement mortar.		()
9. Values of W\C ratio in the range of 0.5 to 0.65 are in common use of concrete.		()
10. Blaine Apparatus tests the dry cement in Permeability, Fineness of cement and a measure of the mean size of the cement grains.		()
11. Tensile Strength test of cement mortar is tested after 21 days.		()
12. Coarse aggregate is the aggregate most of which retained on 4.75mm the IS sieve.		()
13. Etong block is a high concrete which is made from effective cement material besides to fine sand and aluminum powder.		()
14. Disadvantages of solid blocks are heavy weight, High cost and Bad isolation for moisture and sound.		()
15. In High strength concrete, the Cracks pass through the cement paste and cause Sudden collapse.		()
16. We use Silica to design High-strength concrete.		()

Second Question**No. of Branches (4)****(4 marks)****Choose 4 branches only:**

1. Describe how to test the aggregate?
2. Describe how to test concrete by slump test
3. Describe the characteristics of Lime Stone and Granite
4. Describe how to test the Dry cement?
5. Describe how to test the cement paste?
6. How can the water/cement ratio affect the properties of concrete?

Third Question**No. of Branches (6)****(6 marks)****Choose 6 branches only:**

1. What are the aggregate resources in nature?
2. What are the prosperities of Concrete in plastic stage?
3. What are the uses of stones
4. What are the architectural needs of the elevator design?
5. What are the considerations of compressive strength test of cement mortar?
6. What are the types of blocks?
7. What are the Physical, chemical and biological properties of the polystyrene blocks?
8. What are the disadvantages of the empirical method in concrete mix design?
9. What are the considerations in design the elevator Vehicle?

Fourth Question**No. of Branches (1)****(2 marks)**

You have the following ratios:

Water : Cement	0.5 : 1
Cement : (Sand & Aggregate)	1 : 4
Sand : Aggregate	1 : 2

Cement = 300 kg

Additions 2% from concrete mixture.

- Using these ratios, Calculate Water, Sand, Aggregate and Additions weights

Fifth Question**No. of Branches (1)****(1 mark)**

We need to design escalator between two floors rise 6 meters, with angle 35°
Calculate the total horizontal length of the escalator.