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Code No: CE1515

GEC-R14

II B. Tech II Semester Regular Examinations, May 2016

CONCRETE TECHNOLOGY

(Civil Engineering)

Time: 3 Hours

Max. Marks: 60

Note: All Questions from **PART-A** are to be answered at one place.

Answer any **FOUR** questions from **PART-B**. All Questions carry equal Marks.

PART-A

6 × 2 = 12M

1. What is the percentage of water that is to be added to cement mortar for the determination of grade of cement?
2. What are the mechanical properties of aggregates?
3. List the different apparatus used to measure workability of concrete.
4. Define gel space ratio.
5. What are the different types of shrinkage in concrete?
6. Define characteristic strength of concrete.

PART-B

4 × 12 = 48M

1. a) What are Bogue compounds and explain their significance in cement? (6M)
b) What is the effect of super plasticizers on the properties of hardened concrete? (6M)
2. a) Classify aggregates based on size, shape and unit weight. (6M)
b) What are the factors affecting Alkali Aggregate Reaction? (6M)
3. a) What are the factors affecting workability of concrete? (6M)
b) Briefly describe how to conduct workability test on concrete using slump cone apparatus. (6M)
4. a) Explain the effect of Gel-Space ratio on strength of hardened concrete. (6M)
b) Explain Young's Modulus, Dynamic, Tangent, Secant Moduli with graph. (6M)
5. a) What are the factors affecting shrinkage of concrete? (6M)
b) Explain about plastic shrinkage in concrete. (6M)
6. Explain in detail the design procedure of BIS method of mix design. (12M)
