

B.Tech. Civil (Construction Management)

Term-End Examination

June, 2015

00460

**ET-522 : CONCRETE TECHNOLOGY AND
CONSTRUCTION TECHNIQUES**

Time : 3 hours

Maximum Marks : 70

Note : Answer any *five* questions. All questions carry equal marks. Support your answer with neat sketches wherever necessary.

1. (a) What is hydration of cement ? Explain in detail. 7
- (b) Explain the standard consistency test of cement. 7
2. (a) Why is compaction necessary in concrete mix ? What are the various methods adopted for it ? 7
- (b) What is the relation between the strength of concrete mix and water-cement ratio ? Discuss in detail with the help of a diagram. 7

3. (a) What are the basic differences between destructive testing and non-destructive testing ? Under what circumstances are each of them used ? 10
- (b) Discuss the mechanism of Alkali – Aggregate reaction. 4
4. (a) What is the difference between conventional reinforcement and fibre reinforcement ? 7
- (b) What are the superplasticizers ? Classify them. What are their advantages ? 7
5. (a) What do you understand by the term ‘Scaffolding’ ? Explain any two types in detail, with sketches. 7
- (b) What is the importance of surface vibrations ? 3
- (c) Mention the various types of compacting equipment ? 4
6. (a) Write the advantages and disadvantages of a pneumatic caisson ? 6
- (b) What are the factors important for the selection of piles ? Explain. 4
- (c) Elaborate the uses of piles, with examples. 4

7. (a) In which situations would you prefer cement grouting? 4
- (b) What are the important parameters to be considered for concrete mix design? Discuss how these parameters affect concrete mix design. 10
8. Write short notes on any *four* of the following terms : $4 \times 3 \frac{1}{2} = 14$
- (a) High density concrete
 - (b) Curing of concrete
 - (c) Effects of cold water on concreting
 - (d) Segregation and Bleeding of concrete mix
 - (e) Surface saturated dry aggregate
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