

4E4112

Roll No. _____

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B.Tech. IV semester (Main & Back) Examination May - 2018
Civil Engineering
4CE2A Concrete Technology

Time : 3 Hours**Maximum Marks : 80**
Min. Passing Marks : 26**Instructions to Candidates:**

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205).

1. IS 10262

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1. a) Discuss gel - space ratio. (2)
- b) Write basic compounds of cement with their approximate oxide composition limits and discuss the Heat of Hydration. (6)
- c) Explain methods for determination of moisture content of aggregate. (8)

OR

1. a) Discuss the role of water - cement ratio. (4)
- b) Discuss the significance of calcium silicate Hydrates. (4)
- c) Describe methods of determination (with help of sketch) of work ability. (8)

Unit - II

2. a) What is meant by creep of concrete? Discuss factors affecting it. (8)
- b) Explain characteristics of aggregate cement inter face. (4)
- c) Explain the application of rebound hammer. (4)

OR

2. a) What is meant by shrinkage of concrete? Discuss factor affecting it. (6)
- b) Explain application and use of ultrasonic pulse velocity meter with help of figuoe. (6)

- c) What is the principle of half cell potential meter. (4)

Unit - III

3. a) Describe various methods and their suitability for curing of concrete. (8)
b) Describe various types of concrete mix and their suitability. (8)

OR

3. a) Differentiate between the following
i) Weigh batching and volume batching
ii) Tamping and Rodding method of compaction. (8)
b) Discuss briefly
i) Method of compaction ersahilkagyan.com
ii) Importance of curing for concrete (8)

Unit - IV

4. a) Explain the types and uses of water reducing and super plasticising admixtures for concrete. (8)
b) Write short notes on (Any two)
i) Flyash and their effect in concrete
ii) Use of silica fume in concrete.
iii) Air entraining agents (2×4=8)

OR

4. a) Discuss the role of accelerators. Why chloride free accelerators are to be preferred. (6)
b) Explain the role of retarders. (6)
c) Discuss the advantages of using silica fume in concrete. (4)

Unit - V

5. a) Discuss self compacting concrete, its salient properties and applications. (8)
b) Discuss slip form work and its application areas. (8)

OR

- a) What do you understand by high performance concrete? (4)
b) Draw the neat labelled sketch of formwork for 'beam -slab' construction. (6)
c) Describe the salient properties of sulphate resisting concrete. (6)