

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: M.TECH
BRANCH: CIVIL

SEMESTER : III
SESSION : MO/19

SUBJECT: CE511 ADVANCED CONCRETE TECHNOLOGY

TIME: 3 HOURS

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) How does the surface-active agent increase workability? [5]
Q.1(b) Explain methods that you will adopt to cure concrete in areas of water shortage. [5]
- Q.2(a) Why does the alkali-silica reaction disrupt concrete? What precaution can be taken to avoid alkali-silica reaction? [5]
Q.2(b) Describe the various remedial measures and their relative efficiency against corrosion of steel in RC structures. [5]
- Q.3(a) List the methods used for mix proportioning indicating the drawbacks of each method. [5]
Q.3(b) Explain the importance of the maximum size aggregate for normal-strength concrete mix design. [5]
- Q.4(a) Discuss why the strength of the interfacial transition zone is generally lower than the strength of the bulk hydrated cement paste. [5]
Q.4(b) How many types of water are associated with a saturated cement paste? Discuss the significance of each. [5]
- Q.5(a) Briefly write about available natural aggregates to make light weight concrete. [5]
Q.5(b) Discuss on current development in Fiber Reinforced Concrete (FRC). [5]

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