

R13

Code No: 115EP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year I Semester Examinations, November/December - 2016****CONCRETE TECHNOLOGY**

(Common to CE, CEE)

Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) Give the chemical composition of cement. [2]
- b) What is fineness modulus of aggregates? What does it indicate? [3]
- c) Define initial setting time and final setting time of cement. [2]
- d) What is the purpose of mixing water in concrete? [3]
- e) Define water cement ratio. [2]
- f) State necessity of curing for cement concrete. [3]
- g) Give any two requirements of concrete mix design. [2]
- h) Differentiate preliminary mixes and trial mixes. [3]
- i) Give two applications of light weight concrete. [2]
- j) Give the advantages of fiber reinforced concrete. [3]

PART - B**(50 Marks)**

2. Explain different methods of measurement of moisture content of aggregates. [10]
- OR**
- 3.a) What is heat of hydration? How does this affect the quality of concrete?
 - b) Explain different laboratory tests to be conducted on cement to decide its quality. [5+5]
- 4.a) What are the various tests to measure workability? Explain any one with neat sketch.
 - b) Explain segregation and bleeding in concrete. [5+5]
- OR**
- 5.a) List out the factors affecting workability and explain them.
 - b) Write short notes on Quality of mixing water. [5+5]
6. List out the non-destructive tests and explain any two non-destructive testing methods on hardened concrete. [10]
- OR**
- 7.a) Define creep and explain the relation between creep and time.
 - b) Explain shrinkage and types of shrinkage. [5+5]

8.a) Explain Maturity of concrete. [5+5]
b) Write short notes on Gel/ space ratio. OR

9.a) Write step wise procedure for mix design of concrete as per Indian Standards. [5+5]
b) Define durability and its significance.

10.a) Explain light weight aggregate concrete. [5+5]
b) Write short notes on self compacting concrete. OR

11.a) Explain various types of polymer concretes. [5+5]
b) Write short notes on no-fines concrete.

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