

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.

b) Write short notes on Gel/ space ratio.

OR

9.a) Write step wise procedure for mix design of concrete as per Indian Standards.

b) Define durability and its significance.

10.a) Explain light weight aggregate concrete.

b) Write short notes on self compacting concrete.

OR

11.a) Explain various types of polymer concretes.

b) Write short notes on no-fines concrete.

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