

Code No: 115EP

R13

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year I Semester Examinations, November - 2015**

**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) List out different grades of cement. [2]
- b) Explain about bulking of sand. [3]
- c) Define workability. [2]
- d) Explain about bleeding. [3]
- e) Explain rheology of creep. [2]
- f) Brief out different types of shrinkage. [3]
- g) What is the difference between pumpable and normal concrete? [2]
- h) Explain statistical quality control of concrete. [3]
- i) What is aspect ratio of fibers? [2]
- j) Explain about light weight aggregates. [3]

**PART-B (50 Marks)**

- 2.a) Explain in detail about heat of hydration of cement.
- b) Explain in detail about influence of compound composition on properties of cement. [5+5]

**OR**

- 3.a) Explain deleterious substance in aggregate and soundness of aggregate.
- b) Explain about gap graded aggregate and BIS grading. [5+5]

- 4.a) Explain setting times of concrete.
- b) Explain effect of time and temperature on workability of concrete. [5+5]

**OR**

5. Explain in detail about measurement of workability by different tests. [10]

- 6.a) Explain factors affecting strength of concrete.
- b) Explain nature of creep and effects of creep on structural concrete. [5+5]

**OR**

7. Explain in detail about maturity concept of concrete with illustrative examples. [10]

- 8.a) Explain in detail about durability of concrete.
- b) What are different variables in proportioning that influence mix design of pumpable concrete? [5+5]

**OR**

9. Design M 30 normal concrete assuming suitable data according to IS 10262-2009. [10]

10. Explain in detail about Self compacting concrete. [10]

**OR**

11. Explain in detail about Fiber reinforced concrete. [10]