

Code No: 5220AD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**M. Tech I Semester Examinations, February 2017****ADVANCED CONCRETE TECHNOLOGY****(Structural Engineering)****Time: 3hrs****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**5 × 5 Marks = 25**

- 1.a) Explain why curing is essential for a concrete member. [5]
- b) Discuss about Segregation and Bleeding in concrete. [5]
- c) Differentiate between High strength and high performance concretes. [5]
- d) Explain the acceptance criteria as given in IS 456. [5]
- e) List out the factors influencing the design of form work [5]

PART - B**5 × 10 Marks = 50**

2. What is Hydration of cement and what is the effect of admixtures on Hydration of cement. [10]

OR

3. Discuss about classification of aggregates used in concrete. [10]

4. What is Workability of concrete and what are the factors affecting the workability of concrete. [10]

OR

- 5.a) Explain the Gel/Space ratio method of strength estimation of concrete. [5+5]
- b) Explain the maturity concept method of estimating strength of concrete.

6. Define HPC and discuss the requirements and properties of HPC. [10]

OR

7. Discuss the step by step procedure of Concrete Mix Design of HSC Using Erintroy Shaklok Method. [10]

8. Discuss the role of special concretes in the modern construction industry. [10]

OR

9. What is Mix Design? Explain in detail the various factors governing the selection of mix proportion. [10]

10. Define form work and explain different form work systems and discuss factors involved in design of form work. [10]

OR

11. Write short Notes on:

- a) Role of formwork in the quality of concrete construction.
- b) Different types of shoring and their relative merits.