

**CONCRETE TECHNOLOGY  
(Civil Engineering)****Time: 3 Hours****Max Marks: 70****PART-A****ANSWER ALL QUESTIONS****[1 x 10 = 10 M]**

1. a) Write the relation between modulus of elasticity and strength of concrete.
- b) Write test for determination of organic impurities of natural sand.
- c) Write Extensibility of concrete
- d) How mix composition effects workability of concrete
- e) Write down the effects of Fly ash on Hardened concrete.
- f) What is Extensibility of concrete
- g) Write in brief on action of Sewage on concrete.
- h) List out the factors affecting the creep of concrete.
- i) Write double punch test on concrete
- j) List out the ways of measuring pulse velocity through concrete

**PART-B****Answer one question from each unit****[5x12=60M]****UNIT-I**

2. a) Discuss the process of identifying different grades of cement **6M**
- b) Explain the usage of Mineral and chemical admixtures in concrete **6M**
- (OR)**
3. a) Discuss the process of determining the cement setting time both initial and final **6M**
- b) Discuss any two tests done on cement to find its physical properties **6M**

**UNIT-II**

4. a) Explain the role of the main constituents of ordinary portland cement in its strength development **6M**
- b) What is meant by grading of aggregate? Why is it necessary that the aggregate should be properly graded **6M**
- (OR)**
5. a) Distinguish between segregation and bleeding of concrete **6M**
- b) What are special concretes? Name any two and explain. **6M**

**UNIT-III**

6. a) Discuss the detail the role of Water / Cement ratio in concrete **6M**
- b) Discuss in detail on Relation between compression and tensile strength **6M**

**(OR)**

7. a) List various non destructive testing methods of concrete. Explain in a detailed manner regarding various tests **6M**  
b) Discuss in a particular case where NDT test are suggested in testing concrete strength **6M**

#### **UNIT-IV**

8. a) Explain the process of analysing Dynamic modulus of elasticity for concrete **6M**  
b) How impermeable is concrete? Discuss parameters affect the permeability of concrete? **6M**

**(OR)**

9. a) Explain cracks in concrete with respect to before hardening of concrete **6M**  
b) Explain briefly about '**creep**' in short notes. **6M**

#### **UNIT-V**

10. a) Give short notes on the term '**Durability of concrete**'. **6M**  
b) Explain the factors effecting in the choice of mix proportions **6M**

**(OR)**

11. a) Explain how will you account for the moisture present in sand while mix proportioning **6M**  
b) Write the stepwise procedure for mix design of concrete as per Indian standards **6M**