

CONCRETE TECHNOLOGY

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- Write about bogue's compound.
 - Write the purpose of using mineral admixtures.
 - Define bulking of aggregate and write the IS code to be used to perform the test.
 - What are the causes of bleeding of concrete?
 - Define gel space ratio.
 - Write the applications of F.R.C.
 - Define cellular concrete.
 - Write the factors influencing creep.
 - List out the available methods to proportioning the concrete mixes.
 - What are the uses of NDT?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 (a) What is clinker and write the procedure adopted in production of clinker?
 (b) Distinguish between plasticizers and super plasticizers.

OR

- 3 (a) What is meant by Fineness Modulus of sand? Explain the laboratory procedure to find fineness modulus.
 (b) Write short notes on alkali aggregate reaction.

UNIT – II

- 4 (a) Explain the methods available in construction practice to control "segregation" of a concrete mixture.
 (b) Write short notes on maturity concept of concrete.

OR

- 5 (a) What are the factors that influence the strength of cement concrete? Explain Briefly.
 (b) List out the importance of concrete curing.

UNIT – III

- 6 (a) Write the applications of the following types of concrete: (i) Polymer concrete. (ii) No fines concrete.
 (b) List out the different varieties of fibers available in market.

OR

- 7 (a) Write the advantages and disadvantages of using high performance concrete in place of normal strength.
 (b) Write short notes on: (i) SIFCON. (ii) Self Healing concrete.

UNIT – IV

- 8 (a) Write the factors which cause the shrinkage of concrete.
 (b) Write short notes on: (i) Modulus of elasticity. (ii) Poisson's ratio.

OR

- 9 Write the test procedure followed to carry out NDT by using rebound hammer?

UNIT – V

- 10 Design a Concrete Mix of M25 grade for a beam. The specific gravities of Coarse Aggregate and Fine Aggregate are 2.6 and 2.8 respectively. The bulk density of coarse aggregate is 16000 kg/m³ and Fineness Modulus of Fine Aggregate is 2.7. A slump of 50 mm is necessary. Design the concrete mix using IS Method. Assume any missing data suitably.

OR

- 11 (a) Write the procedure for mix design with reference to ACI code.
 (b) Write the advantages of adopting mix design proportions as per codal provisions.
