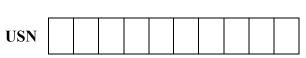
(10 Marks)





Eighth Semester B.E. Degree Examination, Aug./Sept.2020 **Advanced Concrete Technology**

Time: 3 hrs. Max. Marks: 100

Note:1. Answer any FIVE full questions, selecting atleast TWO questions from each part. 2. Use of ACI – 211.1 – 91 and LWC Design charts are permitted.

PART - A

a. Explain voids in Hydrated cement paste. 1

What is Transition zone? Explain factors influencing transition zone on properties of concrete. (10 Marks)

a. Explain the action of plasticizer / super plasticizer, with the help of neat sketches. (10 Marks)

b. Explain Marsh cone test for Optimum dosage of super – plasticizer.

Design a concrete mix using IS method for the mean compressive strength of 26.6 N/mm² for the following data.

Type of cement OPC 43G, Specific gravity = 3.15.

b. Workability 75 mm slump.

c. Exposure condition Mild. d. Max. Nominal size of CA 19mm. e. Maximum W/c ratio 0.55 Minimum cement 320 kg/m^3 . f.

Type of Aggregate Crushed Angular

h. Chemical Admixture Not used. Maximum cement 450 kg/m^3 .

CA j. Specific gravity 2.68 Water absorption 1.0% 0.60% k. Surface moisture 1.

m. Dry rodded density of CA 1640 kg/m^3 .

Finness modulus of FA 3.0.

(20 Marks)

Explain the factors which affect the permeability of concrete. 4 (07 Marks) a. What is Sulphate attack? How resistance of concrete to sulphate attack can be improved? b. (07 Marks)

Write a note on Alkali Aggregate reaction. c.

(06 Marks)

PART – B

- 5 Explain in brief Prepacked concrete of under water concreting. (06 Marks)
 - What is Self Compacting concrete? Explain its significance. b. (07 Marks)
 - Explain the advantages of Self compacting concrete. (07 Marks)
- Explain the factors affecting Fibre Reinforced Concrete (FRC)? 6 (10 Marks)
 - b. Explain the materials used in Ferro cement. (10 Marks)
- 7 a. Explain in brief advantages and disadvantages of Light Weight Concrete [LWC] and methods of production of LWC. (12 Marks)
 - b. What is HPC? Explain the methods of achieving HPC. (08 Marks)
- 8 a. Explain the factors affecting the strength of test specimen under test. (08 Marks)
 - What is non destructive testing? How is it different from normal testing? Explain Rebond hammer and Pulse – velocity test. (12 Marks)