

Roll No.

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**B.Tech. (Computer Science & Engineering/Electrical
Engineering/Electronics & Communication Engineering/Information
Technology) (Sem.-6)**

CONCRETE TECHNOLOGY

Subject Code : BTCE-401-18

M.Code. : 79416

Date of Examination : 19-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) What are the different properties of cement?
- b) Name the different ingredients of concrete.
- c) Define creep.
- d) What are the different types of cement?
- e) Write a short note on quality control.
- f) Define characteristic strength of concrete.
- g) Write a short note on defects of concrete.
- h) Name the various methods of destructive testing of concrete.
- i) Define permeability.
- j) Write a short note on polymer concrete.

SECTION-B

2. What are the different factors affecting strength of concrete?
3. What is the need of compaction in concrete? Also, explain the different procedures adopted for compaction.
4. What are the properties of fresh concrete? Explain in detail.
5. What is sulphate attack? Also, tell the different methods of controlling sulphate attack.
6. What are the various methods of non-destructive testing? Explain any one in detail.

SECTION-C

7. What are the different types of special concrete? Write a detailed note on self healing concrete.
8. Explain the following tests in detail :
 - a) Compressive strength test of concrete
 - b) Split tensile test of concrete
 - c) Flexural strength test of concrete.
9. Design the following concrete mix for f_{ck} of 35N/mm^2 :

Type of exposure = mild, Design mix target slump = 175mm, Max size of coarse aggregate = 20mm, Fine aggregate = Zone III, Specific gravity of cement = 2.87, Specific gravity of water = 1, Specific gravity of admixture = 1.3, Specific gravity of coarse aggregate = 2.89, Specific gravity of fine aggregate = 2.7, Water absorption of coarse aggregate = 0.88%, Water absorption of fine aggregate = 1.26%.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.