

II B. Tech II Semester Supplementary Examinations, November – 2020
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **THREE** Questions from **Part-B**

PART -A

1. a) What are accelerators and mention its purpose (4M)
- b) Define workability of concrete (3M)
- c) What is the affect of Water / Cement ratio on workability and strength (4M)
- d) Define shrinkage and creep of concrete (3M)
- e) What is carbonation of concrete (4M)
- f) What is polymer concrete (4M)

PART -B

2. a) what are the properties of good aggregates for making concrete and discuss in brief various tests carried out on aggregates (7M)
- b) Explain about the different tests conducted on cement in the laboratory to check its suitability (7M)
3. a) What is segregation and bleeding of concrete why they occur, discuss how to prevent them (7M)
- b) Discuss about the Flow table test to measure the workability and its significance (7M)
4. a) i. Discuss about the maturity concept of concrete, ii. The strength of sample of fully matured concrete is found to be 40Mpa. Find the strength of identical concrete at the age of 7 days when cured at an average temperature during day time at 20⁰C and night time at 10⁰C (7M)
- b) Discuss about the rebound hammer test method on concrete structures and its limitations (7M)
5. a) What is Shrinkage of concrete and types and discuss about the factors affecting the shrinkage of concrete. (7M)
- b) Discuss in detail about the relation between creep and time (7M)
6. Design M25 grade concrete mix using IS method for mild exposure and good quality control. The workability required is 0.9 CF. Maximum size of coarse aggregate is 20mm and fine aggregate confirmed to Zone.III. The specific gravity of cement is 3.05, specific gravity of coarse aggregate and fine aggregate is 2.77. Cement is OPC 53 grade. Water absorption by CA is 1.5% and moisture content in FA is 3%. Assume any other suitable data if necessary. (14M)
7. a) Discuss about the development of Polymer concrete and its Properties (7M)
- b) What are the fresh properties of SCC to be checked and discuss about any two methods to verify fresh properties of SCC (7M)