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R-17

Code: 7PT626

M.Tech. II Semester Supplementary Examinations February 2020

Advanced Concrete Technology

(Structural Engineering)

Max. Marks: 60

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 12 = 60 Marks)

UNIT-I

1. a) Why is grading of aggregate important with respect to the properties of fresh concrete? 6M
- b) Mention any three important characteristics of aggregates and their influence on concrete. 6M

OR

2. Write short notes on Masonry cement, Quick setting cement, and Low heat cement by mentioning the situation when each one is recommended. 12M

UNIT-II

3. a) Discuss the effects of using silica fume, slag, Sugar cane bagasse ash on fresh concrete and hardened concrete. 6M
- b) Describe the process of manufacturing of concrete with flow chart. 6M

OR

4. a) Mention the circumstances in which you will recommend the following chemical admixtures. (i) Accelerators, (ii) Air-entraining agents, (iii) Viscosity modifying agents and (iv) Corrosion inhibitors v) Super plasticizer vi) Shrinkage reducing Admixture 6M
- b) Discuss the special attentions to be made in the properties of concrete to be used under water. 6M

UNIT-III

5. Explain the materials selection for the production of High performance concrete and the salient features of high performance concrete. 12M

OR

6. Discuss about the problems generally faced in the preparation of super high strength HPC and the solutions to overcome the same. 12M

UNIT-IV

7. Elaborate the types of nondestructive tests recommended for testing a 100 years old concrete dam structure. 12M

OR

8. Describe the penetration resistance and pull out tests on concrete and its physical significance in the quality control aspects. 12M

UNIT-V

9. a) List the materials used in form work and their advantages. 6M
- b) Discuss about the form work for columns, beams and slab. 6M

OR

10. a) Explain with suitable sketches of the form work for Domes and shells. 6M
- b) Differentiate between slip form work and flying form work. 6M
