

- c) Write short notes on "Ready mixed concrete".
- d) What is Fibre Reinforced Concrete (FRC). Describe the types of fibres. What is the aspect ratio of fibre? What are the advantages and disadvantages of FRC.

OR

Write short notes on:

- i) Polymer concrete
- ii) Ferro cement.

Roll No

CE - 402**B.E. IV Semester**

Examination, June 2016

Concrete Technology**Time : Three Hours****Maximum Marks : 70**

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
- ii) All parts of each question are to be attempted at one place.
- iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.
- iv) Except numericals, Derivation, Design and Drawing etc.
- v) Any missing data assumed suitably and stated clearly.

Unit - I

1. a) What is the meaning of Grade of Concrete?
- b) Describe the functions of fine and coarse aggregate in concrete.
- c) Enlist the different laboratory tests of ingredients of concrete. Describe any one.
- d) Enumerate the different types of cements. Describe any ONE in details on Hydration process, Uses, Advantages and Disadvantages.

Or

Enumerate different Admixtures. Describe any TWO in details on chemical composition, Functioning in concrete and Uses.

[2]

Unit - II

2. a) Describe Stress-Strain curve of hardened concrete under axial compression.
- b) Describe Segregation and bleeding of concrete.
- c) Define the Creep and Shrinkage of concrete, with factors influencing it.
- d) What is the meaning of workability of concrete? Describe the parameters which affect the workability of concrete. Explain Slump method for measurement of workability.

OR

What is the meaning of compressive and flexural strength of concrete? How it measure in laboratory. Describe the effect of age and water cement ratio on strength of concrete.

Unit - III

3. a) What is the meaning of nominal mix and design mix? Describe the suitability of each.
- b) What is the meaning of pozzolanic materials, describe with examples.
- c) Describe the factors influencing mix proportioning of concrete.
- d) Enlist various method of concrete mix design. Describe any ONE in details with graphs and tables.

OR

[3]

Design M25 concrete mix by IS code methods with following data

Cement - OPC 43,
 Quality control - Good,
 Exposure - Mild,
 Workability - Medium,
 Maximum size of aggregate - 20mm,
 Sp Gravity of Coarse Agg. - 2.60,
 Sp Gravity of Fine Agg. - 2.60
 Assume other required data suitably.

Unit - IV

4. a) What is the meaning of curing of concrete? Enumerate various methods of curing.
- b) Compare the weight and volume batching of ingredients for concrete.
- c) Describe the method of concreting under deep water.
- d) Describe the process of concreting in details. Explain the important points to be considered during mixing and compaction of concrete.

OR

Enumerate various non-destructive tests of concrete. Describe any one in details. Also describe the advantages and limitations of non-destructive testing of concrete.

Unit - V

5. a) What is the Shotcrete and Guniting?
- b) What is mass concrete and what is its main problem associated with its casting?