Total No. of Questions :5] *[Total No. of Printed Pages : 2*

Roll No .....

CE-402

B.E. IV Semester

Examination, December 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) Assume other required data, suitably.

1. a) Enlist different types of Cement.
   b) Explain with example meaning of "Grade of Concrete".
   c) Enlist and explain role of different ingredients of concrete.
   d) What is an Admixture? Describe the various important functions of different admixtures used in concrete.

   OR

   Explain step by step procedure of inspection and testing of concrete materials as per I.S. specifications.

2. a) What are different reasons of micro-cracking of concrete?
   b) What do you mean by "Durability of Concrete"?
   c) How permeability of concrete is measured?
   d) Discuss factors affecting rheological properties of concrete in detail.

   OR

   Write short notes on :
   i) Shrinkage and temperature effects,
   ii) Workability verses strength of concrete

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3. a) Enlist various methods of concrete mix design.
   b) Define target mean strength of concrete.
   c) How the design of plastic concrete mix differs from ordinary concrete mix?
   d) Explain the procedure of concrete mix design by IS code of practice.

   OR

   Design M20 concrete mix by IS code method for the following data :

Cement	→	OPC 43 Grade
Quality control	→	Very Good
Exposure	→	Mild
Workability	→	Medium
Maximum size of C.A.	→	20mm
Sp. Gravity of F.A. and C.A.	→	2.65

4. a) Explain the significance of statistical quality control of concrete.
   b) Compare weight and volume batching of ingredients of concrete.
   c) Explain in brief the method of concreting under water.
   d) Explain different non-destructive testing of concrete.

   OR

   Explain in detail repair technology for concrete structures.

5. a) Explain process of Guniting.
   b) Enlist advantages of Ready Mix Concrete.
   c) Define:
      i) Rubble concrete ii) Mass concrete
      iii) Resin concrete
   d) Write short note on:
      i) Prestressed concrete
      ii) Fibre reinforced concrete

   OR

   Explain polymer concrete and its composition in detail.

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