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**B.E. IV Semester (CGPA) Civil Engg.
Examination 2018**

CONCRETE TECHNOLOGY

Paper - CE-401

Time Allowed : Three Hours] [Maximum Marks : 60

- Note :** i) Attempt all questions.
ii) All questions carry equal marks.

Q.1. a) What is cement? Classify different types of cement. 6

b) What are various ingredients of cement concrete and explain function of each. 6

OR

c) Discuss the procedure to find the consistency of standard cement by Vicat apparatus. 6

d) What is the significance of water cement ratio in cement concrete. 6

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(2)

Q.2. a) What do you mean by creep of concrete. 6

b) What do you mean by workability of cement concrete? List and explain the factors affecting workability. 6

OR

c) Write short note on 6

i) Segregation

ii) Bleeding

iii) Admixtures

d) Explain drying shrinkage of concrete. What are the factors which affect the drying shrinkage of concrete. 6

Q.3. Design M40 grade of concrete with the help of following available data on the basis of I.S.10262:2009. 12

i) Cement used - OPC-43 grade conforming to IS8112.

ii) Specific gravity of

cement - 3.15

Coarse aggregate - 2.74

Fine aggregate - 2.74

iii) Chemical admixture - Not used

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(3)

iv) Water absorption

Coarse aggregate - 0.5%

Fine aggregate - 1.0%

v) Coarse aggregate - 20mm graded

vi) Fine aggregate - Zone II as per IS:383

vii) Maximum W-cement ratio - 0.45

viii) Maximum cement content - 450 kg/m³

ix) Minimum cement content - 320 kg/m³

x) Workability - 25.50mm slump

Other data may be assumed suitably.

OR

a) What are the basic consideration of concrete mix design. 6

b) Write short notes on acceptance criteria for concrete. 6



Q.4. a) Write short notes on the following: 6

i) Compaction of concrete

ii) Concreting in cold weather

b) Explain how under water concreting is done. 6

(4)

OR

- c) Write in detail about statistical quality control of concrete. 6
- d) What do you mean by non destructive testing of concrete? 6

- Q.5.
- a) Give the advantages of reinforced cement concrete. 6
 - b) Write short notes on the following: 6
 - i) Polymer concrete
 - ii) Self compatibility of fresh concrete

OR

- c) Enlist the characteristics of light weight concrete. 6
- d) What is ferro cement give its applications. 6

