

Enrollment No:- _____

Exam Seat No:- _____

C.U.SHAH UNIVERSITY

Summer-2015

Subject Code: 4TE03CNT1

Subject Name: Concrete Technology

Course Name: B.Tech (Civil)

Date: 11/5/2015

Semester: III

Marks: 35

Time: 02:30 TO 05:30

Instructions:

- 1) Attempt all Questions of both sections in same answer book/Supplementary.
- 2) Use of Programmable calculator & any other electronic instrument prohibited.
- 3) Instructions written on main answer book are strictly to be obeyed.
- 4) Draw neat diagrams & figures (if necessary) at right places.
- 5) Assume suitable & perfect data if needed.

SECTION-I

- Q-1 Attempt the following.
- | | | |
|-----|--|----|
| (a) | What is the use of ordinary portland cement (OPC). | 01 |
| (b) | Explain rapid hardening cement (RHC). | 02 |
| (c) | Explain quick setting cement. | 02 |
| (d) | Differentiate setting and hardening of cement. | 02 |
- Q-2
- | | | |
|-----|--------------------------------------|----|
| (a) | Explain “ Hydration of cement” | 05 |
| (b) | Explain aggregate impact value test. | 05 |
| (c) | Explain “ Heat of hydration” | 04 |
- OR**
- Q-2
- | | | |
|-----|---|----|
| (a) | List methods of measurement of workability and explain one of them. | 05 |
| (b) | Explain segregation and bleeding. | 05 |
| (c) | Define workability. Discuss factors affecting workability. | 04 |
- Q-3
- | | | |
|-----|---|----|
| (a) | Define creep. Explain factors affecting creep of concrete. | 05 |
| (b) | What is modulus of elasticity of concrete? Explain in brief static modulus of elasticity and dynamic modulus of elasticity. | 05 |
| (c) | Define plastic shrinkage and drying shrinkage. | 04 |
- OR**
- Q-3
- | | | |
|-----|--|----|
| (a) | Write short note on ‘Sea water attack’ on concrete. | 05 |
| (b) | What is effect of weathering-freezing and thawing on concrete? | 05 |
| (c) | What is carbonation? What are the factors affecting carbonation? | 04 |



SECTION-II

- Q-4 (a) Define 'creep'. 01
(b) What is shrinkage? 02
(c) What are the sizes of standard cubes and cylinders used for compression tests? 02
(d) What is capping? Why it is necessary? 02
- Q-5 (a) Explain 'Rebound hammer test'. 05
(b) Explain Non-destructive testing (NDT) and describe ultrasonic pulse velocity test. 05
(c) Describe split cylinder test of concrete. 04
- OR**
- Q-5 (a) Enlist the tests performed on hardened concrete and explain any one in detail. 05
(b) What are the sizes of standard cubes and cylinders used for compression test for concrete? 05
(c) Give mix design steps for ACI method. 04
- Q-6 (a) What are the applications of Polymer Impregnated Concrete (PIC). 05
(b) Distinguish nominal mix and design mix. 05
(c) Define concrete mix design. Give its objectives. List methods of concrete mix design. 04
- OR**
- Q-6 (a) Write short note on Self Compacted Concrete (SCC). 05
(b) Write short note on Fibre Reinforced Concrete (FRC). 05
(c) Give applications, advantages and properties of Ferro cement 04

