Seat No.:	Enrolment No.

Subject Code: X40602

GUJARAT TECHNOLOGICAL UNIVERSITY PDDC - SEMESTER- IV • EXAMINATION - SUMMER 2015

Date: 30/05/2015

Subject Name: Concrete Technology Time: 10.30am-01.00pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **Q.1** Enlist various Bogue's compounds of cement. Explain importance of Bogue's compounds 07 of cement. **(b)** Define workability of concrete? Explain any one test to measure the workability of fresh **07** concrete. **Q.2** Explain: (i) Rapid Hardening Cement (ii) Quick setting cement (iii) Sulphate Resisting **07** (a) Cement Enlist various laboratory tests of cement. Write procedure of any one laboratory test of **(b) 07** cement. OR Enlist various types of chemical admixtures. Explain in brief about Accelerator, Retarder 07 **(b)** and Plasticizer. 0.3 What do you understand by grading of aggregate? Name various types of grading and how 07 (a) does it affect the concrete? Enlist various methods of curing of concrete. Explain any three methods of curing of **(b)** 07 concrete. OR Define segregation and bleeding. List various causes of segregation and bleeding. **07 Q.3** (a) Explain in brief various factors affecting strength of hardened concrete. **07 (b) Q.4** Define durability of concrete. Discuss the impact of water-cement ratio on durability and **07** (a) permeability of the concrete. What is shrinkage of concrete? Give classification of shrinkage. Discuss about plastic **07 (b)** shrinkage and drying shrinkage. OR List various non-destructive tests of concrete. Explain any one non-destructive test in 0.4 **07** detail. Enlist various chemical attacks on concrete. Discuss about alkali-aggregate reaction and **07 (b)** sulphate attack. Enlist the various signs of distress in concrete structures. Describe various method of **Q.5 07** (a) repairing of cracks. Write steps of concrete mix design as per IS method. **07 (b) Q.5** Write short note on following (any two) **07** (a) Fiber reinforced concrete (i) (ii) Light weight concrete Precast concrete (iii) Write short note on following (any two) **(b) 07** Underwater concrete (i) (ii) Ready mixed concrete Shotcrete (iii) *****

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