

FACULTY OF ENGINEERING**B.E. 4/4 (Civil) I-Semester (Main) Examination, November / December 2012****Subject : Concrete Technology****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions of Part - A and answer any five questions from Part-B.****PART – A (25 Marks)**

1. What is meant by loss on ignition? (3)
2. Explain bulking of sand. (2)
3. Define the fineness modulus for coarse aggregate and what is its range. (3)
4. What is meant by a lean mix? (2)
5. Define workability of concrete. (3)
6. Explain how crack propagation will be measured in concrete. (2)
7. Differentiate between mineral and chemical admixtures. (3)
8. What are the effects of hot weather on fresh concrete? (2)
9. Define maturity of the concrete. (3)
10. What is a non-structural light weight aggregate? (2)

PART – B (5x10=50 Marks)

- 11.(a) What are the reactions of hydration of the main compounds in Portland cement? (5)
(b) Discuss the influence of aggregate grading on density of concrete. (5)
- 12.(a) Discuss the factors affecting cohesion of concrete. (5)
(b) What are the factors affecting the workability of concrete? (5)
- 13.(a) Explain the influence of water / cement ratio on strength of concrete. (5)
(b) Discuss the effects of the degree of compaction and age on strength of concrete. (5)
14. Discuss in detail the necessity of mineral and chemical admixtures in concrete. (10)
- 15.(a) Compare the mechanism of hydration at high temperatures with that at normal temperature. (5)
(b) Explain alkali aggregate reaction in concrete. (5)
- 16.(a) Discuss in detail the procedure of the mix design using Indian standard method. (5)
(b) Why the use of nominal mix is not recommended for important structural works in IS456-2000 ? Explain in detail. (5)
- 17.(a) Discuss the effect of density and moisture content on thermal conductivity of light weight concrete. (5)
(b) Explain the applications of fibre reinforced concrete. (5)
