

Code: 9A01502

R09

III B. Tech I Semester (R09) Supplementary Examinations, May 2012 CONCRETE TECHNOLOGY (Civil Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions All questions carry equal marks

- 1 (a) Discuss the chemical composition of ordinary Portland cement.
 - (b) What are the Indian Standard specifications as per I.S.269 1989 for 33 grade ordinary Portland cement with respect to chemical requirements?
- 2 (a) "The strength of the parent rock does not exactly represent the strength of the coarse aggregate in concrete". Validate the above statement with reasoning.
 - (b) What is the significance of aggregate impact value? Explain how it is determined in the laboratory.
- 3 (a) Define the term workability. Explain its significance.
 - (b) How the workability of concrete is to be adjusted according to the size of the aggregate and reinforcement particulars in RCC work?
- 4 (a) What is steam curing? How is it different from ordinary curing?
 - (b) Differentiate between stem curing and high pressure steam curing. What are the advantages of high pressure steam curing?
- 5 (a) What are the various factors affecting the measurement of pulse velocity in the ultrasonic pulse velocity test on concrete? Explain in detail.
 - (b) What are the applications of pulse velocity methods of NDT?
- 6 (a) Draw the typical stress-strain curves for concretes of varying richness of mix proportions.
 - (b) Explain how the dynamic modulus of elasticity of concrete can be determined.
- 7 (a) Discuss the various requirements as per ACI method, for W/C ratio and strength for special exposure conditions.
 - (b) Discuss the various factors in the choice of mix proportions.
- 8 (a) Define the term high density concrete and explain its applications.
 - (b) Discuss the advantages of high density concrete and explain in which situations this concrete can be used.
