

Code: R7310103

**R7**

B.Tech III Year I Semester (R07) Supplementary Examinations, May 2013

**CONCRETE TECHNOLOGY**

(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Define the term accelerators. Discuss different types of accelerators used in concrete.  
(b) Discuss the advantages and disadvantages of using accelerators.
- 2 (a) Define the term "Bulking of aggregates". Explain its significance with reference to concrete making.  
(b) Explain the simple field test to determine the bulking of aggregates.
- 3 (a) What do you understand by the term "Workability"?  
(b) Discuss the various factors affecting the workability of concrete.
- 4 (a) Define the term curing of concrete. How does it influence the development of strength of concrete?  
(b) Explain the following methods of curing:  
(i) Membrane curing. (ii) Water curing. (iii) Application of heat.
- 5 (a) What are the factors which influence the compressive strength of concrete?  
(b) What are the IS code provisions for NDT of concrete?
- 6 (a) What is meant by shrinkage of concrete? What are the various factors influencing the shrinkage of concrete.  
(b) Discuss in detail, about plastic shrinkage of concrete.
- 7 Design M30 mix of concrete for the following data:  
7 days strength of cement ..... = 39 N/mm<sup>2</sup>  
Maximum size of the aggregate..... = 20 mm-angular  
Degree of workability..... = 0.87 C.F or 30 mm slump  
Degree of quality control..... = fair  
Degree of exposure..... = severe  
Cement used..... = 53 grade OPC  
Specific gravity of cement..... = 3.15  
Specific gravity of coarse aggregate... = 2.70  
Specific gravity of fine aggregate.... = 2.65  
Sand zone..... = zone II
- 8 Write short notes on the following:  
(a) Fiber reinforced concrete.  
(b) Cellular concrete.  
(c) High density concrete.

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