

1133**Code : 15CE43T***Register
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IV Semester Diploma Examination, Nov./Dec.-2018**CONCRETE TECHNOLOGY****Time : 3 Hours]****[Max. Marks : 100**

- Note :**
- (i) Answer any **six** questions from Part – A. Each questions carries **5** marks.
 - (ii) Answer any **seven** full questions from Part – B. (Q. No. **19 Compulsory** and any **six** from remaining). Each questions carries **10** marks.
 - (iii) IS 10262-2009 is allowed in examination

PART – A

1. Define Admixture. Write a note on fly ash. **5**
2. Write a relationship between water cement ratio and strength of concrete. **5**
3. Define workability. What are the factors affecting workability ? **5**
4. Write a note on Carbonation. **5**
5. List the various methods of mix design. What are the data to be collected for mix design ? **5**
6. What are the precautions to be taken in hot weather and cold weather concreting ? **5**
7. Differentiate between Screeding and floating. **5**
8. What is ferro cement concrete ? Mention its advantages and specific application. **5**
9. Write a short note on no fines concrete. **5**

PART – B

10. List the physical properties of cement. Explain the test of find initial setting time of cement with neat sketch. **10**
11. (a) Define Bulking of sand, explain its significance in concrete. **5**
(b) List properties of Aggregate. Write a short note on size of coarse aggregate. **5**

12. (a) Explain Transition Zone. 5
 (b) Write a short note on water requirement for hydration of cement. 5
13. List the factors affecting Durability. Explain the effect of water cement ratio on durability and permeability. 10
14. List the factors affecting strength. Explain the procedure to find the flexural strength of concrete specimen. 10
15. (a) List the exposure condition and explain. 5
 (b) Explain the factors affecting mix proportion. 5
16. Define compaction. Discuss various types of vibrators used in concreting. 10
17. (a) Define Batching. Explain the methods of batching. 5
 (b) Define curing. Explain any one method of curing of concrete. 5
18. List the waste/recycled materials used for making concrete. Mention the advantages & applications of this concrete. 10
19. Design the concrete mix proportion for M30 grade by IS 10262-2009 : 10

DESIGN STIPULATION FOR PROPORTIONING	TEST DATA FOR MATERIALS
Grade designation : M30	Cement Used : OPC 43 grade confirming to IS8112
Type of Cement : OPC 43 grade confirming to IS8812.	Specific gravity of cement : 3.15.
Maximum nominal size of aggregate : 20 mm	Specific gravity :
Maximum water cement ratio : 0.50.	Coarse aggregate : 2.68
Minimum cement content : 350 kg/m ³	Fine aggregate : 2.65
Maximum cement content 450 kg/m ³ .	Water absorption :
Workability : 25-50 mm (slump)	Coarse aggregate : 0.6%
Exposure condition : Moderate.	Fine aggregate : 1.0%
Degree of supervision : Good	Free moisture :
Type of aggregate : Crushed angular aggregate.	Coarse aggregate : NIL
Chemical admixture : Not recommended	Fine aggregate : NIL
	Sieve analysis :
	Coarse aggregate : Confirming to table 2 IS 383
	Fine aggregate : Confirming to Zone I of IS 383