A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 59102

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Civil Engineering

15UCE902 – CONCRETE TECHNOLOGY

(IS 10262 :2009 Permitted)

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. For quality control of Portland cement, the test essentially done is CO1- U

   (a) setting time (b) soundness (c) Consistency (d) all the above

2. If the fineness modulus value of fine aggregate is 2.78, the type of sand is CO1- U

   (a) Dense sand (b) Fine Sand (c) Medium Sand (d) Coarse Sand

3. Which of the following is mineral admixture …… CO2 R

   (a) metakaolin (b) silica fume (c) fly ash (d) above the all

4. Choose the odd one among the following retarding chemicals listed below CO2- R

   (a) Phosphates (b) Lignosulphonates

   (c) Borates (d) Copper compounds

5. The maximum cement content not including flyash and GGBS in concrete as per IS 456: 2000 is CO3- R

   (a) 420kg/m^3 (b) 475kg/m^3 (c) 520kg/m^3 (d) 450kg/m^3

6. Slump test of concrete is a measure of its …….. CO3- R

   (a) consistency (b) compressive strength (c) tensile strength (d) Workability

7. To prevent segregation, the maximum height for placing concrete is CO4- R

(a)100cm (b)125cm (c)150cm (d) 200cm

8. The process of hardening the concrete by keeping its surface moist is known as CO4- R

(a)Wetting (b) Curing (c) Placing (d) Compacting

9. What could be the possible answer among the following for water cement ratio for high strength concrete? CO5- R

(a) 0.5 (b) 0 .15 (c) 0.35 (d) 0.40

10. The aspect ratio of the fibre is the ratio of CO5- R

(a) Length to diameter (b) Diameter to length

(c) Diameter to thickness (d) Thickness to length

PART – B (5 x 2= 10Marks)

11. What are the all types of cement? CO1- U

12. Why the accelerating admixtures are added to concrete? CO2-U

13. What are the factors affecting proportioning of concrete mixes? CO3-U

14. List the test for workability of concrete ? CO4- R

15. What is light weight concrete? CO5- R

PART – C (5 x 16= 80Marks)

16. (a) (i) Explain in detail about the initial and final setting time of cement? What is their importance? CO1- Ana (8)

(ii) What are the tests based on cement and explain any one ? CO1- U (8)

Or

(b) (i) What do you understand by the term grading of aggregates? What importance this term carries as far as design of concrete mix is concerned. CO1- U (8)

(ii) Write short note on Alkali Aggregate reaction. Discuss the various factors promoting Alkali Aggregate reaction. CO1- U (8)

17. (a) What is Super plasticizer? Classify and explain the types of Superplasticizer. CO2- U (16)

Or

(b) Explain in detail Accelerators and Retarders. CO2- U (16)

18.	(a)	Explain the Design Procedure for BIS method of Concrete Mix Design	CO3- App	(16)
		Or		
	(b)	Explain the Design Procedure for DOE method of Concrete Mix Design.	CO3- U	(16)
19.	(a)	Explain the various test conducted on fresh concrete?	CO4- U	(16)
		Or		
	(b)	What are the different Non-Destructive Testing procedures? Explain Rebound hammer test in detail	CO4- U	(16)
20.	(a)	What is polymer concrete? What are the various types? Explain the properties and applications.	CO5- U	(16)
		Or		
	(b)	State the advantages of light weight concrete and its applications	CO5- U	(16)

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