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

Question Paper Code: 59102

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

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. Which cement contains high percentage of C_3S and less percentage of C_2S? CO1 R

   (a) Rapid Hardening Cement (b) Ordinary Portland Cement

   (c) Quick Setting Cement (d) Low Heat Cement

2. Aggregates to be used for wearing course, the impact value shouldn't exceed CO1- R

   (a) 30% (b) 35% (c) 40% (d) 25%

3. Setting time of cement increases by adding CO2- R

   (a) Gypsum (b) CaCl2 (c) NaOH (d) Hydrogen peroxide

4. What is the allowed reduction of water with super plasticizers without reducing workability. CO2- R

   (a) 10% (b) 20% (c) 30% (d) 40%

5. Maximum nominal size of aggregates to be used in concrete may be as large as possible within the limits prescribed by CO3- R

   (a) IS 456-2000 (b) IS 456-2010 (c) IS 513-1999 (d) IS 465-1990

6. What is the approx. mix proportion for M25? CO3- R

   (a) 1:3:6 (b) 1:2:4 (c) 1:1.5:3 (d) 1:1:2

7. Workability of concrete can be improved by addition CO4- R

(a) Iron (b) Sodium (c)Zinc (d) Sulphur

8. The process of hardening the concrete mixes by keeping its surface moist for a certain period is called CO4- R

(a) Curing (b) Floating (c) Troweling (d) Compacting

9. The sound absorption coefficient of light weight concrete is nearly CO5- R

(a) Twice (b) Thrice (c) Four times (d) Six times

10. What could be the possible answer among the following for compressive strength of high strength concrete CO5- R

(a) 10MPa (b) 20MPa (c) 30MPa (d) 40MPa

PART – B (5 x 2= 10 Marks)

11. List with chemical formula for Bogue's compounds. CO1- R

12. List the effect of fly ash on fresh concrete CO2- R

13. What are the factors to be considered for mix design? CO3- R

14. How will you calculate the bleeding water percentage? CO4- R

15. What are the fibres used in fibre reinforced concrete? CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Draw and explain the flow diagram to represent the manufacturing process of cementby wet process. CO1- U (16)

Or

(b) Write any three test procedures to determine the properties of aggregates. CO1- U (16)

17. (a) Write a note on silica fume as an admixture. CO2- U (16)

Or

(b) Infer the effects of super plasticisers on Hardened concrete? CO2- U (16)

18. (a) Simplify the design step procedure for M25 grade concrete. CO3- App (16)

Or

	(b)	How will you calculate the cement content and aggregate contents formix design?	CO3- App	(16)
19.	(a)	Explain the slump cone test procedure with neat sketches.	CO4- U	(16)
		Or		
	(b)	Examine various experiments conducted on hardened concrete.	CO4- U	(16)
20.	(a)	Name the materials for high strength concrete. Explain in detail.	CO5- U	(16)
		Or		
	(b)	Explain the Fibre reinforced Concrete and geopolymer concrete in detail.	CO5- U	(16)

59102