Reg. No. : | | | | | | | | | | |

Question Paper Code: 49108

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Elective

Civil Engineering

14UCE908 - CONCRETE TECHNOLOGY

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

11. Hydration of cement is due to chemical action of water with

(a) Tricalcium silicate and dicalcium silicate
(b) Dicalcium silicate and tricalcium aluminate
(c) Tricalcium aluminate and tricalciumalumino ferrite
(d) All the above

2. The bulk density of aggregates does not depend upon

(a) size and shape of aggregates (b) specific gravity of aggregates
(c) grading of aggregates (d) size and shape of the container

3. _____ is added in order to prevent flash setting of cement.

(a) Calcium chloride (b) Gypsum
(c) Di-calcium silicate (d) Tri calcium aluminate

4. Super plasticizer does not participate in any chemical reaction with cement.

(a) gypsum (b) calcium chloride
(c) super plasticizer (d) none of these

5. The maximum size of coarse aggregate to be used in RCC as per IS456:2000.

(a) 20 mm (b) 25 mm (c) 30 mm (d) 35 mm

6. The high strength of rapid hardening cement at early stage, is due to its

(a) finer grinding (b) burning at high temperature
(c) increased lime cement (d) higher content of tricalcium

7. Internal friction between the ingredients of concrete, is decreased by using

(a) less water (b) fine aggregates
(c) rich mix (d) more water and coarse aggregates

8. Workability of concrete for a given water content is good if the aggregates are

(a) rounded (b) angular (c) square (d) flaki

9. What is the maximum density value of light weight concrete?

(a) 1850 kg/m^3 (b) 1950 kg/m^3
(c) 2000 kg/m^3 (d) 2050 kg/m^3

10. Concrete in the structural member has to pass through

(a) plastic stage (b) hardened stage
(c) both (a) and (b) (d) neither (a) nor (b)

PART - B (5 x 2 = 10 Marks)

11. List few types of cement.

12. What are admixtures?

13. Compare nominal mix and design mix.

14. Define Young's modulus.

15. Define ferro-cement.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain in detail about the various test conducted on cement. (16)

Or

(b) List the various types of cements as per Indian standard. Brief their uses. (16)

17. (a) What is super plasticizer? Explain the effect of super plasticizer in concrete. (16)

Or

(b) Write a short notes on (i) GGBS (ii) Silica fume (iii) Fly ash (iv) Metakaoline. (16)

18. (a) Explain the procedure of IS method of mix design. (16)

Or

(b) Explain the procedure to design a concrete mix based on ACI method. (16)

19. (a) (i) Write down the procedure of flexural strength test on concrete beam. (8)

(ii) Brief about compressive strength test on concrete cube. (8)

Or

(b) (i) Describe the test procedure to determine the compressive strength of cement?. (8)

(ii) Explain the importance of creep and shrinkage. (8)

20. (a) What is Fibre reinforced concrete? Give its application. (8)

(b) How light weight concrete is produced? Brief its properties and suitable applications. (8)

Or

(b) Write short notes on (i) Ferrocement with its applications (ii) Geopolymer concrete. (16)