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**Question Paper Code: 42105**

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

Second Semester

Civil Engineering

14UCE205 – CONSTRUCTION MATERIALS

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 1 = 10 Marks)

- For one cubic metre of brick masonry, number of bricks required, is  
(a) 400                      (b) 425                      (c) 450                      (d) 500
- A stone is rejected if it absorbs water more than  
(a) 5 %                      (b) 10 %                      (c) 15 %                      (d) 20 %
- The commonly used raw material in the manufacture of cement is  
(a) slate                      (b) sand stone                      (c) lime stone                      (d) basalt
- Bulking of sand is caused due to  
(a) surface moisture                      (b) air voids                      (c) viscosity                      (d) clay content
- Specified compressive strength of concrete is obtained from cube tests at the end of  
(a) 15 days                      (b) 21 days                      (c) 27 days                      (d) 28 days
- The slump test of concrete is used to measure its  
(a) workability                      (b) tensile and compressive strength  
(c) impact value                      (d) homogeneity

7. The moisture content in timber for frame work should not exceed  
(a) 5% (b) 10% (c) 15% (d) 20%
8. Teak wood suitable for  
(a) sports articles (b) furniture (c) railway sleepers (d) all the above
9. Cast iron contains carbon upto  
(a) 8% (b) 10% (c) 7% (d) 5%
10. The temperature range for true annealing is  
(a) 100-200°C (b) 300-400°C (c) 600-700°C (d) 700-1000°C

PART - B (5 x 2 = 10 Marks)

11. What are the defects in brick masonry?
12. What is meant by hydration of cement? What is its importance?
13. When RMC is recommended?
14. What is timber?
15. What is the difference between steel and cast iron?

PART - C (5 x 16 = 80 Marks)

16. (a) Briefly explain the tests conducted on bricks for their suitability for construction work. (16)

Or

- (b) What are the simple field tests that you can carry out to determine the suitability of stone to determine quality of stones. (16)
17. (a) Construct a flow diagram for dry and wet process of manufacture of cement with brief explanation. (16)

Or

- (b) Explain about the following tests on aggregates
- (i) Crushing Strength (8)
- (ii) Abrasion Resistance (8)

18. (a) Give the step by step procedure for concrete mix design by IS method. (16)

Or

(b) (i) Detail about the rebound hammer test with a neat sketch. (8)

(ii) Compare IS method with ACI method. (8)

19. (a) What are the characteristics of good timber? What is the object of seasoning it? Explain briefly the different methods of seasoning timber. (16)

Or

(b) What is meant by seasoning of timber? Brief about natural and artificial seasoning. (16)

20. (a) Describe the types of hot rolled steel sections and cold formed steel sections. (16)

Or

(b) Explain about the anticorrosive measures for steel. (16)

