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**Question Paper Code: 42105A**

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

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)

- Marble is a  
(a) Sedimentary rock    (b) Metamorphic rock    (c) Igneous rock    (d) Artificial rock
- Excess of alumina in the clay  
(a) makes the brick brittle and weak  
(b) makes the brick crack and warp on drying  
(c) changes colour of the brick from red to yellow  
(d) improves impermeability and durability of the brick
- 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

6. The slump test of concrete is used to measure its  
 (a) workability (b) tensile and compressive strength  
 (c) impact value (d) homogeneity
7. Seasoning of timber is the process of  
 (a) Cutting timber (b) Drying timber  
 (c) Wetting timber (d) Painting timber
8. Seasoning of timber  
 (a) increases the weight of timber (b) improves strength properties of timber  
 (c) does not give dimensional stability (d) all of these
9. Cast iron contains carbon upto  
 (a) 8% (b) 10% (c) 7% (d) 5%
10. The value of poisson's ratio for steel within the elastic region ranges from  
 (a) 0.17 to 0.25 (b) 0.25 to 0.33  
 (c) 0.33 to 0.41 (d) 0.41 to 0.49

PART - B (5 x 2 = 10 Marks)

11. Give the standard dimensions of brick.
12. What are the various tests which are to be done on aggregates?
13. Give the types of concrete mixes
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) (i) What is the importance of aggregate grading? (8)  
(ii) Write the procedure for determine aggregate crushing value. (8)

Or

- (b) Explain about the following tests on aggregates  
(i) Crushing Strength (8)  
(ii) Abrasion Resistance (8)
18. (b) Explain the design procedure for IS method of concrete. (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) Brief about various defects in timber. (16)

Or

- (b) What is meant by seasoning of timber? Brief about natural and artificial seasoning. (16)
20. (a) Discuss about the following  
(1) Mechanical treatment of steel (8)  
(2) Heat treatment of steel (8)

Or

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

