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Question Paper Code: 42105

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

1. A first class brick should not absorb water more than _____ of its own dry weight after 24 hours immersion in cold water.
(a) 10% (b) 15% (c) 20% (d) 25%
2. 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
3. The commonly used raw material in the manufacture of cement, is
(a) Slate (b) Sand stone (c) Lime stone (d) Basalt
4. In a mortar, the binding material is
(a) Cement (b) Sand (c) Surkhi (d) Clinker

5. 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 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. 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) Explain about the criteria for selection of stones along with the characteristics to be considered. (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) Discuss about the various types of cement. (16)

Or

(b) Explain about the following tests on aggregates (8)

(i) Crushing Strength (8)

(ii) Abrasion Resistance (8)

18. (a) What are the ingredients of concrete? Brief about its characteristics and function. (16)

Or

(b) Explain the procedure of IS method of concrete mix design. (16)

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) Give the properties and uses of cast iron and mild steel. (16)

Or

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

