

**D 112**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005.

Second Semester

Civil Engineering

CE 1152 — CONSTRUCTION MATERIALS

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by quarry sap?
2. What is bloating in bricks?
3. Define "Flakiness of aggregate".
4. List out any four types of cement.
5. Mention any four types of curing techniques.
6. Briefly explain the influence of surface texture on workability of concrete.
7. State any two methods for improving the fire resistance property of timber.
8. List out the steps involved in painting of new woodwork.
9. List out the functions of geofabrics.
10. What are the characteristics of ceramic materials?

PART B — (5 × 16 = 80 marks)

11. (i) Explain the maturity concept of concrete. (8)
- (ii) What are the effects of "over compaction" and "under compaction" of concrete. (4 + 4)

12. (a) (i) How bricks are classified? (6)
- (ii) Enumerate the chief characteristics of clay as material used for manufacture of bricks. Describe its behaviour under varying conditions. (10)

Or

- (b) (i) Describe any two tests that you will conduct to assure the quality acceptance of stones. (8)
- (ii) Describe the properties and uses of any four varieties of stones suitable of construction works. (8)
13. (a) (i) How is the lime slaked? What is the significance of slaking lime? (8)
- (ii) Describe the properties of blast furnace slag cement and sulphate resisting cement. (8)

Or

- (b) (i) What are the specifications of good sand for general use in buildings? (8)
- (ii) Explain the use of the following industrial byproducts in concrete making. (2 × 4 = 8)
- (1) Copper slag
- (2) Rice husk ash.
14. (a) (i) Discuss the essential characteristics and uses of deodar in the construction industry. (8)
- (ii) Discuss any two methods of preserving timbers. (8)

Or

- (b) (i) Describe briefly how an oil paint is prepared. (6)
- (ii) What are the objects of varnishing a surface? Describe the procedure of varnishing new and old wood works. (10)
15. (a) (i) Explain the composition and applications of any four types of glass. (8)
- (ii) Describe the thermal and electrical properties of ceramics. (8)

Or

- (b) (i) Describe the polymerisation of ceramics. (8)
- (ii) Explain the applications of geosynthetics in road construction. (8)