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**Question Paper Code : 52758**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Fourth Semester

Civil Engineering

CE 6401 — CONSTRUCTION MATERIALS

(Common to: Environmental Engineering)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List out the raw materials used for the manufacture of Fire bricks.
2. Write the classification of concrete blocks.
3. What do you mean by hydration of cement?
4. What is meant by bulking of sand?
5. Distinguish between nominal mix and design mix.
6. What do you understand by consolidation of concrete?
7. State any four characteristics of good timber.
8. Write any four tests on bitumen.
9. What are the forms of sealants?
10. Define the term composite materials.

PART B — (5 × 13 = 65 marks)

11. (a) Describe the various Qualities of a good building stone. (13)  
Or  
(b) Discuss the reasons for the causes of defects in bricks. (13)

12. (a) Explain with a flow chart the step by step dry process of manufacturing of cement. (13)

Or

- (b) Enumerate the various methods for physical testing of coarse aggregate. Discuss any two tests in detail. (5 + 8)

13. (a) Explain in detail about the manufacture process of concrete. (13)

Or

- (b) Explain the fresh and hardened properties of concrete. (13)

14. (a) Explain the various types of heat treatment of steel and their purpose. (8 + 5)

Or

- (b) (i) Enumerate the advantages of using aluminium as building material. (5)

- (ii) What are Varnishes? Describe the various types of varnishes. (2 + 6)

15. (a) (i) Describe the various classification of glass. (6)

- (ii) Describe the various applications of clay products in construction works. (7)

Or

- (b) Explains the following terms:

(i) Refractories

(ii) laminar Composite.

PART C — (1 × 15 = 15 marks)

16. (a) Discuss in detail about the factors affecting the durability of concrete and state protective measures established for durable concrete. (8 + 7)

Or

- (b) Describe the various classifications of geosynthetics and also explain various applications of geosynthetic in construction works.