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**Question Paper Code : 20506**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023

Third Semester

Civil Engineering

CE 3302 – CONSTRUCTION MATERIALS AND TECHNOLOGY

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the limitations in using stone as a construction material ?
2. What is efflorescence in bricks?
3. How does veneer in plywood influence its strength?
4. What is the difference between geomembranes and geotextiles?
5. State the need for a deep foundation.
6. Mention two materials used for sound insulation.
7. List the different types of concrete mixers.
8. At what circumstances, machines are needed for erection.
9. What are the advantages of proper planning in construction Industry?
10. What is the need for a dummy activity in a network?

PART B — (5 × 13 = 65 marks)

11. (a) With neat sketches, describe the manufacturing process of clay bricks, both traditional and modern way.

Or

- (b) Explain the need, manufacture and uses of concrete hollow blocks and lightweight concrete blocks.

12. (a) Discuss in detail the use of Timber in building construction, bringing out suitability and sustainability.

Or

- (b) Which are the metals and their alloys used in building construction? Explain the specific applications, advantages and disadvantages.

13. (a) With neat sketches, describe all aspects of stone masonry and brick masonry.

Or

- (b) Write notes on

- (i) Fire protection of buildings. (5)
- (ii) Thermal insulation (4)
- (iii) Ventilation requirements (4)

14. (a) List some of the machines used for earth excavation? Describe with a sketch the most commonly used earth excavating machine.

Or

- (b) With neat sketches, describe any two dewatering and pumping equipments. Mention their available capacities.

15. (a) Compare and contrast between CPM and PERT methods.

Or

- (b) With an example of the construction of a commercial mall, construct a CPM chart, identifying all activities and assuming all data.

PART C — (1 × 15 = 15 marks)

16. (a) Describe all the tests needed to select bricks for construction purposes with the required test results for each of the tests.

Or

- (b) Explain the construction process of any two shallow foundations.