

**THAPAR UNIVERSITY, PATIALA**  
**B. TECH (DISTANCE EDUCATION) EXAMINATION, SEPTEMBER, 2007**  
**BUILDING MATERIALS AND CONSTRUCTIONS (CE002D)**

TIME ALLOWED = 3 HOURS

MAXIMUM MARKS 100

NOTE: ALL QUESTIONS ARE COMPULSORY

1. Short answer type:

(10×2=20)

- (i) State with reasons the kind of stone you would recommend for use in construction of external wall of a building situated on the sea shore.
- (ii) Why wrought iron cannot be adopted for making castings?
- (iii) Explain why volcanic ashes are extremely fine grained in structure?
- (iv) Why the oil paints should not be applied during humid and damp weather?
- (v) During the manufacture of lime, why the heating process of the burning of limestones should be gradual?
- (vi) Explain the reason why the dry sand and the sand completely flooded with water has practically the same volume?
- (vii) What are the substitutes for sand in the manufacture of mortar?
- (viii) What is the difference between segregation and bleeding of the concrete mix?
- (ix) What is curing of concrete? Why is curing important?
- (x) What are the effects on which the rate of natural ventilation depends? Explain.

2. (i) Briefly describe the working of Bull's trench kiln for burning of bricks. (8)

(ii) Draw neat sketches in plan and elevation of successive courses to illustrate the construction of a brick wall  $2\frac{1}{2}$  brick thick in the English bond at right angles corner. (8)

3. (i) What do you understand by the term seasoning of the timber? Why is artificial seasoning adopted? Describe the various methods. (8)

(ii) Describe the constituents of paint mentioning the specific functions of each. (8)

4. (i) Describe the methods of slaking burnt lime. (2)
- (ii) What is setting action of cement? What are the four principle compounds formed during the setting action of cement. Write their relative proportions and properties. (8)
- (iii) Compare fat lime with the hydraulic lime (6)
5. (i) Explain the difference between the flexural strength and split tensile strength of concrete. (6)
- (ii) Write short note on compaction of concrete. (4)
- (iii) Discuss the applicability of various workability tests to concretes of different levels of workability. (6)
6. (i) What do you understand by echo and reverberation? (4)
- (ii) Explain the classification of traps. (6)
- (iii) Explain in brief various systems of mechanical ventilation (6)

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