

## DIPLOMA IN CIVIL ENGINEERING

Term-End Examination

June, 2011

02424

### BCE-043 : CONSTRUCTION TECHNOLOGY-II

Time : 2 hours

Maximum Marks : 70

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*Note : Question No. 1 is compulsory. Answer any four questions from the remaining part. All questions carry equal marks.*

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1. Choose the correct alternative in each of the following questions : **2x7=14**
- (a) Site order book is used for recording
    - (i) instructions of the executive engineer
    - (ii) construction measurements
    - (iii) requisition of plants and equipment
    - (iv) indents for materials to be ordered
  - (b) Batching refers to
    - (i) Controlling the total quantity at each batch
    - (ii) Weighing accurately, the quantity of each material for a job before mixing.
    - (iii) Controlling the quantity of each material into each batch.

- (iv) adjusting the water to be added in each batch according to the moisture content of each of materials being mixed in the batch
- (c) The most suitable type of equipment for compaction of Cohesive soils is
  - (i) Smooth - wheeled rollers
  - (ii) Vibratory rollers
  - (iii) Sheep foot rollers
  - (iv) Tampers
- (d) Crushing strength of a first class brick should not be less than :
  - (i)  $3.5 \text{ N/mm}^2$       (ii)  $7.0 \text{ N/mm}^2$
  - (iii)  $10.5 \text{ N/mm}^2$       (iv)  $14.0 \text{ N/mm}^2$
- (e) A low class fire has a fire load. (in  $\text{kJ/m}^2$ ) of :
  - (i)  $4.60 \times 10^6$  and over
  - (ii)  $2.10 \times 10^6$  to  $4.60 \times 10^6$
  - (iii)  $1.15 \times 10^6$  to  $2.10 \times 10^6$
  - (iv) less than  $1.15 \times 10^6$
- (f) Le Chatelier's device is used for determining the :
  - (i) setting time of cement
  - (ii) soundness of cement
  - (iii) tensile strength of cement
  - (iv) compressive strength of cement

- (g) The highest frequency which an human ear can identify as audible is
- (i) 10000 cps                      (ii) 20000 cps  
(iii) 25000 cps                    (iv) 30000 cps
2. (a) What aspects need to be kept in mind during the planning of contract works ? What are the stages in the planning of contract works ?
- (b) Write the names of tests carried out for the testing of bricks, PCC solid blocks and coarse aggregate used in concrete.
3. (a) Discuss the role that users can play in efficient maintenance of a building facility . What are the agencies for carrying out repair works ?
- (b) Explain the major factors considered for fire accidents in buildings.
4. (a) Describe various methods used for making connections in steel structures, briefly discussing the salient features and advantages of each .
- (b) Explain briefly the characteristics of a good audible sound, and its use in acoustics of buildings.

5. (a) List the methods for achieving the desired compaction in field giving details of any one equipment used in compaction of cohesive soils, water bound macadam, fine grained soil. 7

(b) Explain various types of crusher. Explain primary and secondary crushers. What are advantages of Impact Crusher? 7

6. (a) What do you understand by troubleshooting? List and explain various troubleshooting. 7

(b) Explain various applications of bituminous compounds in building construction? 7

7. Write short notes on *any four* of the following :

(a) Principles of thermal Insulation  $4 \times 3\frac{1}{2} = 14$

(b) Granular piles

(c) Pneumatic-tyred Roller

(d) Sound Insulation

(e) Fire safety in a Building