

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/  
TECHNOLOGY—OCTOBER, 2012

CONSTRUCTION MATERIALS AND ENGINEERING

(Common for CE, AR, QS, EN and WR)

[Time : 3 hours

(Maximum marks : 100)

PART—A

Marks

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. Distinguish between stratified rocks and foliated rocks.
2. Mark annual rings, Medullary rays, heartwood and cambium layer by drawing a cross section of a wood.
3. What is the use of abrasives in building construction? Name two materials used as abrasives.
4. What are the functions of lintel?
5. What are the uses of 'Nosing' in a stair? (5×2=10)

PART—B

II Answer *any five* of the following. Each question carries 6 marks.

1. Classify rocks based on chemical composition and geological formation with examples.
2. How the slump of concrete is measured and what is the significance of conducting slump test?
3. List any six uses of PVC.
4. Discuss the features of any three false ceiling material.
5. How the partition wall is different from load bearing wall and list the common material used for partition wall construction?
6. What are the requirements of a good formwork?
7. Discuss the common causes of dampness in buildings. (5×6=30)

## PART—C

(Answer *one* full question from each unit. Each question carries 15 marks.)

## UNIT—I

- III (a) Explain the composition and uses of ordinary portland cement, Rapid hardening portland cement, white cement and quick setting cement. 8  
 (b) Describe the process of quarrying of stone by blasting. 7

OR

- IV (a) Explain different methods of moulding of bricks. 8  
 (b) List out the salient features and uses of Aluminium in Building construction. 7

## UNIT—II

- V (a) What qualities of PVC makes it a popular building material ? 8  
 (b) Explain the procedure adopted for the application of paint on a new metal surface. 7

OR

- VI (a) What are the unique features of fibre glass reinforced plastic (FRP) ? Write three uses of FRP. 8  
 (b) What are the common wood products used in building work ? Explain the use of any three of them. 7

## UNIT—III

- VII (a) Draw the plan showing the arrangement of bricks in two consecutive layers of English bond meeting at the corner of a wall of  $1\frac{1}{2}$  brick thickness. 8  
 (b) Explain the common methods used for damp proofing for floor, wall and roof. 7

OR

- VIII (a) With the help of a neat sketch, explain the arrangement of underpinning and its application. 8  
 (b) Explain the pre tensioning method of pre stressing and its common application. 7

## UNIT—IV

- IX (a) What do you understand by shallow foundation ? Explain with sketches the situation where a raft foundation is used. 8  
 (b) Explain the following types of window and their uses :  
 (i) Dormer window (ii) Bay window 7

OR

- X (a) Briefly describe the component part of a dog legged stair with a sketch. 8  
 (b) What are the advantages of steel form work over wooden form work ? 7