

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL-2021**

CONSTRUCTION MATERIALS & ENGINEERING

[Maximum marks: 75]

(Time: 2.15 Hours)

PART – A

I (Answer any *three* questions in one or two sentences. Each question carries 2 marks)

1. Define bulking of sand.
2. Define water cement ratio.
3. What are abrasives? Give two examples for abrasives.
4. Define shoring.
5. Define the terms (a) Voussoirs (b) Spandril (3 x 2 = 6)

PART – B

II (Answer any *four* of the following questions. Each question carries 6 marks)

1. Define workability. List the factors affecting workability.
2. Discuss the functions of various ingredients of cement.
3. Differentiate between thermo plastics and thermo setting plastics.
4. Discuss the properties and uses of cork as a building material.
5. List the causes and effects of dampness.
6. Discuss on defects in plastering.
7. Define Bay window, Corner window and Dormer window. (4 x 6= 24)

PART – C

(Answer *any of the three units* from the following. Each full question carries 15 marks)

UNIT –I

- III. (a) List the various characteristics of cement which influence the quality of concrete. (6)
(b) Explain slump test on fresh concrete. (9)

OR

- IV.** (a) Discuss in detail the procedure for determining the standard consistency of cement. (9)
(b) Briefly discuss the various operations involved in the preparation of a good quality concrete. (6)

UNIT-II

- V.** (a) List out and discuss briefly the ingredients of an oil paint. (9)
(b) Write short notes on (i) Fibre glass (ii) Rubber (6)

OR

- VI.** (a) Discuss the properties and uses of enamel paint and cement paint (8)
(b) Discuss the different types of varnish. (7)

UNIT-III

- VII.** (a) Bring out the differences between English bond and Flemish bond. (8)
(b) Discuss the different methods of damp proofing (7)

OR

- VIII.** (a) Explain the principle of prestressing. Also differentiate between post tensioning and pre tensioning. (8)
(b) Discuss the merits and demerits of steel formwork over timber formwork (7)

UNIT-IV

- IX.** (a) Briefly discuss the classification of foundations, also describe any 4 types of shallow foundations. (12)
(b) Define the terms: (i) Nosing (ii) Baluster (iii) Newel post (3)

OR

- X.** (a) List out the requirements of a good stair. (8)
(b) List the advantages of flat roof (7)
