

B. Tech-1st

Basic Civil Engineering

Full Marks : 50

Time : $2\frac{1}{2}$ hours

Answer **all** questions

The figures in the right-hand margin indicate marks

Symbols carry usual meaning

1. Answer *all* questions : 2 × 5

(a) What is the similarity and dissimilarity between Sill and Lintel ?

(b) What is difference between plasticity vs. ductility and the minimum value of ductility ?

(c) What is relationships between rail, sleeper and ballast ?

(Turn Over)

(2)

(d) How water demand in a municipal area is estimated ?

(e) What is gravity dam ?

2. (a) Justify, why this subject "Basic Civil Engineering" is common to all branches ? 4

(b) Enumerate different building types with examples as per NBC. 4

Or

(a) Describe the importance in details of Civil Engineering in the Infrastructure development. 4

(b) Describe different building classifications. 4

3. (a) Define and explain the procedure to determine various mechanical properties of building materials. 4

(3)

Left image
Flaw migration

(b) Describe different types of cement with its applications. 4

Or

Short answers : 2 × 4

(i) Mortar classification

(ii) Concrete applications

(iii) Function of each paint ingredients

(iv) Adhesive classifications.

4. (a) Describe the advantages and disadvantages of air transportation system. 4

(b) Describe different types of Indian road transportation system. 4

Or

Short answers : 2 × 4

(i) Rigid and flexible pavement

(ii) Urban roads

(iii) Air Traffic Control

(iv) Roman roads.

5. (a) Write down the principles of conventional water treatment process. 4
- (b) Describe with a neat sketch the public water supply system. 4

Or

Short answers : 2 × 4

- (i) Rapid sand filtration
- (ii) Disinfection
- (iii) Coagulation
- (iv) Drinking water standards.

6. (a) Write down the detailed classification of the irrigation system. 4

- (b) Explain with a sketch the canal irrigation system. 4

Or

Short answers : 2 × 4

- (i) Multipurpose river valley projects
- (ii) Culturable Command Area
- (iii) Importance of canal irrigation system
- (iv) Purposes of Dam construction.