Faculty of Engineering & Technology
First Semester B.E. (C.B.S.) Examination
BASICS OF CIVIL ENGINEERING
Paper—V

Time—Two Hours] [Maximum Marks—40

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Assume suitable data wherever necessary.

(3) Diagrams and Chemical equations should be given wherever necessary.

(4) Illustrate your answers wherever necessary with the help of neat sketches.

(5) Use of Non Programmable calculator is permitted.

1. (a) Enumerate principles of building planning and explain aspect and prospect. 3

(b) Define the following :

(i) F.S.I.

(ii) Carpet Area

(iii) Built up Area. 3

(c) A plot size is 40 m × 50 m. House owner constructed 750 m^2 on ground floor and 650 m^2 on first floor. If permissible FSI is 0.90, how much area can be constructed on second floor ? 4

OR

2. (a) What are the various components of buildings ? 3

(b) Enumerate the various types of foundation and their suitability. 3

(c) Determine the area required for the SBC footing for axial load of 800 kN. The of soil is 250 kN/m^2. Also determine the depth of foundation. Assume column size 300 × 450, unit wt. of soil(Y) 18 kN/m^3 and angle of friction is 30°.

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3. (a) Explain the fundamental principles of surveying. 3

(b) What is GPS ? State its application. 3

(c) Enumerate the names of various modern equipments of surveying, explain GIS in brief. 4

OR

4. (a) Explain the classification of Indian roads. 3

(b) Differentiate between Rigid and Flexible Pavement.

 3

(c) Draw the cross-sectional sketch of National Highway bituminous road and label it properly. 4

5. (a) State the various sources of water. 3

(b) Draw the flow chart diagram of conventional water treatment plant and mention their uses/operations in short. 4

(c) State the standards of purified water. 3

OR

6. (a) What are objectives of the Watershed Management ? Explain them with examples. 3

(b) What are methods of water harvesting ? Justify the present need of it. 3

(c) Enumerate the types of dam. Also draw a neat labelled sketch of Gravity Dam. 4

7. (a) Briefly explain various instruments used in construction work. 4

(b) What is a strain gauge ? State its applications. 3

(c) What is SCADA ? Mention its significance. 3

OR

8. (a) What is Telemetry ? Mention its applications and significance. 3

(b) Define Green Building Concept and state various points to be considered in green building design. 4

(c) Define LEED and mention the main features of LEED certified building. 3

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