

Code No: R204101T

R20

SET - 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Regular/Supplementary Examinations OCT/NOV 2025
ELEMENTS OF CIVIL ENGINEERING

(OPEN ELECTIVE)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks

UNIT-I

1. a) Explain the role of civil engineers in the development of a country's infrastructure. [7M]
b) Discuss the importance of planning, scheduling, and construction management in civil engineering projects. [7M]
(OR)
2. a) Define surveying and explain its objectives and uses in civil engineering. [7M]
b) What are the fundamental principles of surveying? Describe with suitable examples. [7M]

UNIT-II

3. a) Differentiate between whole circle bearings (WCB) and reduced bearings (RB) with neat sketches. [7M]
b) Explain the terms true meridian, magnetic meridian, declination, and dip of the needle. [7M]
(OR)
4. a) What is leveling? Describe its objects and uses in civil engineering? [7M]
b) Explain the different methods of leveling used to determine the relative elevations of points. [7M]

UNIT-III

5. a) Write short notes on properties and uses of stone and bricks used in construction. [7M]
b) Explain the manufacturing process and properties of cement. [7M]
(OR)
6. a) Compare ferrous and non-ferrous metals with examples. [7M]
b) Write a brief note on timber, glass, and plastics as building materials. [7M]

UNIT-IV

7. a) State and explain the principles of building planning. [7M]
b) What are the basic requirements of a good building plan? [7M]
(OR)
8. a) Classify buildings based on occupancy and structure, and list common building components. [7M]
b) Explain the term building byelaws and mention their importance in building construction. [7M]

UNIT-V

9. a) Define hydrology and explain its importance in civil engineering. [7M]
b) List and explain the sources of water and their significance in water resources development. [7M]

(OR)

10. a) What is watershed development? Discuss its objectives and benefits. [7M]
b) Explain the various types of hydraulic structures of storage with examples. [7M]

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