

Code No: R194101H

R19

Set No. 1

IV B.Tech I Semester Regular Examinations, November – 2022

ELEMENTS OF CIVIL ENGINEERING

(Open Elective)

Time: 3 hours

Max. Marks: 75

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

UNIT-I

- 1 a) The sides of a rectangular tract were measured as 82.397 m and 66.132 m with a 30 m metallic tape too short by 25 mm. Calculate the error in the area of the tract. [8]
b) Explain in detail the Impact of Infrastructural Development on the Economy of a Country. [7]

(OR)

- 2 a) What are the various types of scales used in surveying? Explain each of them in detail. [8]
b) Describe the scope of Civil Engineering in the development of a country. [7]

UNIT-II

- 3 a) Explain the following terms related to the levelling [6]
i. Height of Instrument
ii. Reduced Level
iii. Back sight and Fore sight
b) In an anticlockwise traverse ABCA, all the three sides were equal in length. The magnetic fore bearing of the line BC obtained by prismatic compass was $15^{\circ}30'$. The bearing of sun observed was $184^{\circ}30'$ at local noon with the compass. Calculate the magnetic bearing and true bearings of all the sides of the traverse. [9]

(OR)

- 4 a) The following readings were taken with a level and 4 m staff. Draw up a levelbook page and reduce the levels by the height of instrument method. [9]
0.578 B.M.(= 58.250 m), 0.933, 1.768, 2.450, (2.005 and 0.567) CP1 (Change Point), 1.888, 1.181, (3.679 and 0.612) CP2, 0.705, 1.810
b) Write a short note on Remote sensing and Geographic Information System. [6]

UNIT-III

- 5 a) What are the various physical properties which are necessary to test the building materials? Explain any five with suitable equations. [11]
b) Describe the classification of timber. [4]



(OR)

- 6 a) Give the classification of ceramic materials [6]
b) Explain the process of manufacturing of cement with neat sketches. [9]

UNIT-IV

- 7 a) What do you mean by building byelaws? Explain their role in building construction in a panchayat. [7]
b) Elaborate the importance of Vastu in the building planning. [8]

(OR)

- 8 a) Describe the classification of buildings based on their occupancy and structure. [7]
b) Describe the elementary principles and basic requirements of a building planning with suitable examples. [8]

UNIT-V

- 9 a) Explain the role of pipelines used for water conveyance and the role of pipe roughness. Which factor deals with the pipe roughness provide its equation? [7]
b) Explain the water requirement for irrigation. [8]

(OR)

- 10 a) Draw neat sketch of hydrologic cycle and show various processes involved in that cycle. Explain the evapotranspiration. [6]
b) A flow of $0.1 \text{ m}^3/\text{s}$ flows down in a rectangular channel of width 0.6 m and has an adjustable bottom slope. If Chezy's C is 56 determine the bottom slope necessary for uniform flow with a depth of flow of 0.3 m. Also, find the conveyance of flow. [9]

