

Code No: R194101H

R19

Set No. 1

IV B.Tech I Semester Advance Supplementary Examinations, March - 2023
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) Explain the planning and scheduling in the construction of a structure. [6]
b) A survey line was measured on sloping ground and recorded as 117.84 m. The difference of elevation between the ends was 5.88 m. The tape used was later found to be 30.66 m when compared with a standard of 30 m. Calculate the corrected horizontal length of the line. [9]

(OR)

- 2 a) According to your knowledge, what are the three most important infrastructural developments taken place in India? How they are responsible for the development of the country? [9]
b) Find the horizontal length in 'm' of a line recorded as 247.4 links (20 m chain is used) when measured on ground sloping 1 in 4. [6]

UNIT II

- 3 a) The following bearings were observed in running a compass traverse: [7]

Line	FB	BB
AB	66°15'	244°00'
BC	129°45'	313°00'
CD	218°30'	37°30'
DE	306°45'	126°45'

Find the correct fore and back bearings and the true bearings of the lines, given that the magnetic declination is 1°40' E.

- b) The following consecutive readings were taken with a level on continuously sloping ground at a common interval of 20 m.
0.420, 1.115, 2.265, 2.900, 3.615, 0.535, 1.470, 2.815, 3.505, 4.445, 0.605, 1.925, 2.885.
The last station has an elevation of 155.272 m. Calculate the reduced levels of the points by rise and fall method. [8]

(OR)



- 4 a) A page of level book is reproduced below in which some readings marked as(\times), are missing. Complete the page with all arithmetic checks.

Station	B.S.	I.S.	F.S.	Rise	Fall	R.L.	Remarks
1	3.150					\times	
2	1.770		\times		0.700	\times	C.P.
3		2.200			\times	\times	
4	\times		1.850	\times		\times	C.P.
5		2.440			0.010	\times	
6	\times		\times	1.100		\times	C.P.
7	1.185		2.010	\times		222.200	C.P.
8		-2.735		\times		\times	Staff held inverted
9	\times		1.685		4.420	\times	C.P.
10			1.525		0.805	\times	
Σ	12.055		\times	\times	\times		

[10]

- b) Explain the Global Positioning System. What are its uses?

[5]

UNIT III

- 5 a) List out various physical properties that are necessary to check the quality of cement. Explain any two of them. [7]
 b) Describe the important properties of coarse and fine aggregates used for construction. [8]

(OR)

- 6 a) What are the sources of fine aggregate? Give the characteristics and uses of sand. [7]
 b) What tests would you specify to ensure if the cement supplied at the site is of good quality? [8]

UNIT IV

- 7 a) Describe various design loads experienced by a structure and also discuss briefly the IS code provisions. [9]
 b) Define Vaastu. What is its role in the building planning? [6]

(OR)

- 8 a) Elaborate in detail about various elements of building construction [7]
 b) List out and briefly explain the common building components. [8]

UNIT V

- 9 a) Briefly explain various processes involved in the hydrologic cycle. [7]
 b) Illustrate the necessity of water requirement for various purposes and explain how it is useful for power generation. [8]

(OR)

- 10 a) Define the fresh water. What are the various sources of fresh water resources available? Elaborate the same carefully. [7]
 b) Estimate the constant rate of withdrawal from a 1375 ha reservoir in a month of 30 days during which the reservoir level dropped by 0.75 m in spite of an average inflow into the reservoir of $0.5 \times 10^6 \text{ m}^3/\text{day}$. During the same month, the average seepage loss from the reservoir was 2.5 cm, total precipitation on the reservoir was 18.5 cm and the total evaporation was 9.5 cm. [8]

