

VI-SEM/CIVIL/2022(S)**TH-1 Land Survey-II****Full Marks: 80****Time: 3 Hours****Answer any FIVE Questions including Q No.1 & 2****Figure in the right hand margin indicates marks**

1. Answer All the questions.

2 X 10

- Define the term 'Isogonic lines' and 'Agonic lines'.
- Define the term 'Photogrammetry'.
- Define the Multiplying constant and Additive constant of a tacheometer.
- Express the relation between the Radius and Degree of Curve.
- Define GIS.
- Express the horizontal distance when Line of Sight is inclined but staff is held vertically.
- What are the common elements of map which are used for reading of maps and interpretation?
- Define the term "Bar Scale" in map.
- Define Versed sine of a curve. Express it mathematically.
- Define the term 'Longitude and Latitude'.

2. Answer any SIX questions.

5 X 6

- Describe briefly the different elements of a Simple Circular Curve with neat sketch.
- Differentiate between Vertical aerial Photograph and Oblique Aerial Photograph.
- Determine the values of Stadia constants from the following observations.

Instrument Station	Staff Reading on	Distance (m)	Stadia Reading		
			Lower	Centre	Upper
O	A	200	1.255	1.785	2.780
	B	250	1.625	1.830	3.250
	C	300	0.780	2.980	3.855

- Explain the following terms in connection with the Map Nomenclature.
(i) UTM's (ii) Field Notes
- Explain briefly about 'Thematic Map'.
- Discussed the advantages & disadvantages of Photogrammetric Surveying.
- What is a Total Station? Why is it preferred in surveying these days?

3. Two tangents intersect at a chainage of 1530.0 m, the deflection angle is 60° . Calculate the following quantities for setting out of a curve of 500m radius. 10
- Length of curve
 - Tangent Length
 - Length of Long Chord
 - Mid-ordinate &
 - Apex distance
4. Define the term “DGPS”. What are the application/uses of DGPS in day-to-day life? 10
5. How an industrialist can makes feasibility study from maps before set up an industry at local? Give your views. 10
6. Write Short notes on : 10
- Ortho Image Generation
 - Magnetic Declination
 - Public Land Survey System
 - Open Series Map
7. The following observations were taken with a tacheometer fitted with an anallatic lens, the staff being held vertically, the constant of tacheometer is 100. 10

Inst. Station	Height of Instrument	Staff Station	Vertical angle	Staff Reading			Remark
				Lower	Centre	Upper	
P	1.320	BM	$-5^\circ 15'$	1.320	1.845	2.725	R.L of Bench Mark(B.M) =260.850m
P	1.320	A	$+7^\circ 30'$	0.860	1.625	2.780	
B	1.460	A	$-7^\circ 25'$	1.725	2.420	2.965	

Calculate the R.L of point ‘B’ and the horizontal distance between B.M & point B.

6TH SEM./CIVIL ENGG.//2022(S)
TH -2 Construction Management

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. What is muster roll?
 - b. Define owning and operating cost.
 - c. What is equipment schedule?
 - d. What do you mean by invoice?
 - e. State the objective of preparing job layout.
 - f. What is line and staff organisation?
 - g. What is meant by “Dummy Activity”.
 - h. What do you mean by workmen’s compensation act?
 - i. What are the objectives of quality control in a construction project?
 - j. What do you mean by non destructive method of quality control?
2. Answer **Any Six** Questions 5 x 6
 - a. State the difference between CPM and PERT.
 - b. State the factors to be considered while selecting equipment.
 - c. What is construction management? State the objectives of construction management.
 - d. Write down the advantages and disadvantages of line organization.
 - e. What are the causes of conflicts?
 - f. What are the limitations of bar chart?
 - g. Describe briefly the features of network planning.
3. Describe the steps for inspection and testing of construction equipments. 10
4. Explain about the importance of owning and operating costs in making decisions for hiring and purchase of equipments. 10
5. Explain the causes of accident on a construction site. Describe the safety measures required in excavation and demolition work. 10
6. (a) Define motivation and mention different types of motivation. 5
(b) Describe methods of recording progress of work. 5
7. Describe the various stages of planning for construction. 10

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TH3 Advance Construction Techniques & Equipments

Full Marks: 80

Time- 3 Hrs

Answer any FIVE Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Define prefabrication.
 - b. What is artificial timber?
 - c. Define hot bitumen??
 - d. What is HDPE?
 - e. What is retrofitting of building?
 - f. What is earthing?
 - g. What are geo synthetics?
 - h. Define earthquake?
 - i. What is the instrument used to measure intensity of earth quake?
 - j. Define per capita demand?
2. Answer **Any Six** Questions 6 x 5
 - a. Write short notes on glass fibre?
 - b. Write pre fabrication and its necessity?
 - c. Write down about ground improvement techniques?
 - d. Write down the major effects of earthquake on RCC buildings?
 - e. Write down about artificial system of ventilation.
 - f. Write down about artificial seasoning of timber?
 - g. Write down about geo textiles and geogrids.
3. Explain the classification of retrofitting system. 10
4. Write down the process of cold water distribution in high rise buildings? 10
5. Explain horizontal bands used in building. 10
6. Write short notes on 10
 - a. Wall cladding
 - b. Acoustic material
7. Describe about excavating equipments. 10

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TH4 Concrete Technology

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Letter 'M' and number in grade "M25 "refers to what?
 - b. What do you mean by setting time of cement?
 - c. What is meant by retarder?
 - d. What is curing?
 - e. Give dimensions of slump cone?
 - f. What is gunnitting?
 - g. What do you mean by efflorescence?
 - h. Write composition of cement?
 - i. What is soundness of cement?
 - j. What is air entraining admixture?

2. Answer **Any Six** Questions 6 x 5
 - a. What do you mean by grading of aggregate?
 - b. What are important functions of admixtures?
 - c. Explain methods for compacting concrete?
 - d. What is silicafume concrete?
 - e. How cracks are repaired in concrete?
 - f. What are the factors responsible for variation in quality of concrete?
 - g. What are the preventive measures for concrete deterioration?

3. Define workability and its different tests to determine it? 10
4. Write down different tests of cement? 10
5. What is inspection and testing and durability requirement as per I S 456? 10
6. What the properties are of harden concrete? 10
7. Write short notes on: 10
 - (a)Ready mix concrete
 - (b)Accelerator