6TH SEM /CIVIL /2023(S)

TH-1 Land Survey-II

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 additive and multiplying constant in tacheometry.

b. Differentiate between simple curve and compound curve.

c. Write down two uses of transition curve.

d. Define map and map scale.

e. Define Magnetic Declination.

f. What do you mean by 'field notes'.

g. What are the broad classification of photogrammetry?

h. Define Total Station.

i. What is the versed sine of a curve? Express it mathematically.

j. What is Contour?

2. Answer **Any Six** Questions 6 x 5

a. Two distances of 50 m and 75 m were accurately measured on a fairly level ground. The intercept on the staff held vertical were accurately measured on a fairly level ground. The intercept on the staff held vertical were 0.495 and 0.745 m respectively. Calculate the tacheometric constants of the instrument.

b. Write short note on
   i. Political map.
   ii. Climate map

c. Differentiate between Aerial Photogrammetry and Terrestrial Photogrammetry.

d. What are the advantages and disadvantages of total station.

e. List out components of GIS and write down their functions.

f. Explain Latitude and Longitude.

g Explain the three views of information system.

3	A staff was held vertically at a distance of 100 m and 300 m from the centre of theodolite fitted with stadia hairs and the staff intercepts with the telescope horizontal were 0.990 and 3.000 respectively.The instrument was then set over a station A of RL 950.50 m and height of instrument was 1.42 m.The stadia hair readings of a staff held vertically at station B were 1.00,1.83 and 2.67 mwhile the vertical angle was -10 degrees.Find the distance AB and RL of B.	10
4	Two tangents intersect at a chainage of 1,250 m. The angle of intersection is 150°. Calculate all data necessary for setting out a curve of 250 m radius by the deflection angle method. The peg intervals may be taken as20 m. Prepare a setting out table when the least count of the vernier is 20". Calculate the data for field checking.	10
5	Write short notes on: i. Focal Length ii. Flying Height	10
6	Explain Obstacles in curve ranging when point of intersection inaccessible with neat sketch.	10
7	Explain in details about the various processes in DGPS survey in respect of base station set up, rover set up and processing of GPS data.	10

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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 bin card?	
b.	What do you mean by job layout.	
c.	Define work breakdown structure.	
d.	What is free float.	
e.	What is muster roll?	
f.	What is scheduling?	
g.	What is epicentre.	
h.	Define optimistic time.	
i.	What do you mean by working drawing?	
j.	What is meant by Dummy activity?	
2.	Answer **Any Six** Questions.	6 x 5
a.	Differentiate between PERT and CPM.	
b.	Outline the advantages and disadvantages of line organization.	
c.	Write down the objectives of construction management.	
d.	State the advantages of Bar Chart.	
e.	What are the objective of preparing job layout	
f.	What are the rule for preparing indent and invoice .	
g	Describe various non destructive methods of quality control.	

3. A project has the following times schedule. 10

Activity	1-2	1-3	2-4	3-4	3-5	4-9	5-6	5-7	6-8	7-8	8-9	8-10	9-10
Time in weeks	4	1	1	1	6	5	4	8	1	2	1	8	7

Construct CPM Network and compute.

I. TE and TL for each event.

II. Float for each activity.

III. Critical path and its duration.

4. Describe different types of conflicts . 10

5. Write down the preparation of a job layout and prepare a job lay out for construction of a RCC framed building. 10

6. Describe different ways of equipment maintenance. 10

7 . What are the types of labour incentives, elaborate. 10

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TH-3 Advance Construction Technique And equipment (ACTE)

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 PVC?
   b. What is Plinth Band? Write a use.
   c. Define Seismic Retrofitting.
   d. Why Fabrication is done and what are the types?
   e. List out the types of Wiring.
   f. Define Artificial Sand.
   g. What do you mean by Geo-synthetics?
   h. What is the instrument used to measure Magnitude of earthquake? How it is measured?
   i. Define Soil Reinforcing with proper example.
   j. Define Slope Stabilization. Where it is used?

2. Answer **Any Six** Questions 6 x 5
   a. What are the additional strengthening measures in masonry building?
   b. Describe Fibre as a Construction Material.
   c. What are the points to be considered while selection of wiring?
   d. Write down the assumptions made in earthquake resistant design of structures.
   e. Describe about ground improvement techniques in construction.
   f. Describe Fuse and note down there types?
   g Write a brief note on Geo-textiles and Geo-grids.

3 Elaborate excavating equipments with neat sketch. 10

4 Write the methods and systems of ventilation. 10

5 Classify retrofitting techniques and their use. 10

6 Explain horizontal bands used in building with broad examples. 10

7 Explain Soil reinforcing in the field of construction. 10

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TH-4 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. What do you mean by nominal mix.
   b. What is hydration of cement ?
   c. Define fineness modulus ?
   d. What do you mean by efflorescence ?
   e. What are the types of deterioration ?
   f. What is the effect of sulphate if present in concrete?
   g. What do you mean by accelerator?
   h. What is gunitting ?
   i. Define creep and shrinkage of concrete?
   j. What is workability of concrete?

2. Answer **Any Six** Questions 6 x 5

   a. Explain about types cement?
   b. Write the short notes on shotcrete concrete and ready mix concrete.
   c. Explain about different types of admixtures?
   d. Write the difference between nominal and design mix concrete..
   e. What are the types of formwork ?
   f. What are various factors causing variation in quality of concrete?
   g How cracks are repaired in concrete?

3 Write down different tests of cement ? 10

4 Write the requirement of mix design and give a brief about I .S .code method of mix design. 10

5 What are the methods to determine workability of concrete? 10

6 Explain about deterioration of concrete and its prevention? 10

7 What is inspection and testing and durability requirement as per I S 456 ? 10