CE 224 (R-22)

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II/IV B. Tech. DEGREE EXAMINATIONS, AUGUST - 2024

Second Semester

CIVIL ENGINEERING

SURVEYING AND GEOMATICS

Time : **Three Hours** Maximum : **70** Marks

Answer ONE Question from each Unit.

All Questions carry equal marks. 5x14=70 M

UNIT - I

1. a) Discuss brief about the principles and objectives of surveying.

   b) Differentiate clearly between plane and geodetic surveying.

(OR)

2. a) Write and explain the formulas for true length, true area and shrunk scale.

   b) Differentiate well conditioned and ill conditioned triangles.

UNIT - II

3. a) Explain the types of meridians.

   b) What is local attraction ? Briefly explain different sources of local attraction.

(OR)

4. The following bearings were observed with a compass. Calculate the interior angles.

LINE	FB
AB	60^o30^1
BC	122^o
CD	46^o
DE	205^o30^1
EA	300^o

P.T.O.

UNIT - III

5. The following figures were extracted from a level field book, some of the entries being illegible owing to exposure to rain. Insert the missing figures and check your results. Rebook all the figures by the "rise and fall" method.

STATION	B.S.	I.S.	F.S.	RISE	FALL	R.L.	REMARKS
1	2.285					232.460	B.M. 1
2	1.650		X	0.020			
3		2.105			X		
4	X		1.960	X			
5	2.050		1.925		0.300		
6		X		X		232.255	B.M. 2
7	1.690		X	0.340			
8	2.865		2.100		X		
9			X	X		233.425	B.M. 3

(OR)

6. What is contour interval ? Explain different types of contours with the help of neat sketches.

UNIT - IV

7. The following give the values in feet of the offsets taken from a chain line to an irregular boundary.

Distance	0	50	100	150	200	250	300	350	400
Offset	10.6	15.4	20.2	18.7	16.4	20.8	22.4	19.3	17.6

Calculate the area in Sq. Yards included between the chain line, the irregular boundary and the first and last offset by Simpson's rule.

(OR)

8. A railway embankment 400 m long is 12m wide at the formation level and has the side slopes 2 to 1. The ground levels at every 100m along line are a under :

Distance	0	100	200	300	400
R.L.	204.8	206.2	207.5	207.2	208.3

The formation level at zero chainage is 207.00 and the embankment has a rising gradient of 1 in 100. The ground is level across the centre line. Calculate the volume of earthwork.

UNIT - V

9. a) Explain the principles of EDM instruments.

   b) Write a short note on aerial Photogrammetry and its types.

(OR)

10. a) What is aerial survey ? How do you plan for flight for aerial photography ?

    b) Explain the following :

       (i) Isocenter.

       (ii) Principle point.