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TEST-3 EXAMINATION (May 2018)

B.Tech. IV-Semester

Course Code: 10B11CE412
Course Name: Surveying
Course Credit: 4

Max. Marks: 35
Max. Time: 2 hrs

Note : This paper contains two printed pages. Assume suitable data if required.

Q1. Answer the following in short. [CO2] **(5)**

1. What do you mean by fiducial edge of an alidade?
2. What is curvature error in levelling? How it is adjusted?
3. Define the closing error in a traverse.
4. Differentiate between Transit and non-transit theodolite. What are different uses of a theodolite?
5. How mid ordinate rule is used to get area of land surveyed?

Q2. The following notes refer to the reciprocal observations taken from one level.

Instrument station	Staff reading on		Remarks
	A	B	Distance AB =800 m
A	1.03	1.63	R L of A = 450 m
B	0.95	1.54	

(i) Find R L of point B
(ii) Combined correction for curvature and refraction
(iii) The error in collimation adjustment of the instrument. [CO2,CO4] **(5)**

Q3. Compute the area by Double meridian distance method for the following traverse. [CO3] **(5)**

Line	Length (m)	Bearing (m)
AB	150.65	N 62 °30 'E
BC	142.85	S 59 °45 'E
CD	168.9	S30 °30 'W
DE	121.55	N 72 °15 'W
EA	124.55	N 26 °37 'W

Q4. Two straight AB and BC meet at a chainage of 4242.0 m. The angle of intersection is 140°. It is required to set out a 5° simple circular curve to connect the straights. Calculate the necessary data for setting out curve by the method of offsets from the chord produced with an interval of 30 m. [CO2] **(5)**

Q5. An incomplete traverse task is obtained as follows. Calculate the missing quantities L and α. [CO6] **(6)**

Line	Length (m)	Bearing
AB	100	α
BC	80	39 °30′SE
CD	*60*	40 °30′SW
DA	L	49 °45′NW

Q6. What do you understand by three point problem? Solve the problem by any method with neat sketch. [CO1] **(3)**

Q7. (a) What is tangential method of tacheometry? How will you find out the horizontal distance and vertical distance when both angles of target are angle of depression? [CO2, CO4] **(1+2)**

(b) It was required to determine the distance between two pints A and B by a tacheometer fitted with anallactic lens (K=100, C=0). With the instrument at A and staff at B, the observation of staff readings was 1.255, 2.215 and 3.170 m. What is the horizontal distance AB, if observation were made with vertical angle + 9° 46'? Later on it was found that constant of instrument was 100 and 0.5. What would be the percentage error in the horizontal distance? [CO2, CO4] **(3)**