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S.E. (Civil) (I Sem.) EXAMINATION, 2018

SURVEYING

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.

(ii) Neat sketches must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Assume suitable data, if necessary.

(v) Use of electronic pocket calculator is allowed in the examination.

(vi) Use of cell phone is prohibited in the examination hall.

Q.1. (a) Enlist temporary adjustment of plane table surveying and explain Intersection method of plane table surveying with neat sketch . (06)

(b) The following records refers to an operation involving reciprocal leveling

Instrument At	Staff reading on		Remarks
	A	B	
A	2.265	3.790	Distance AB = 1200.00 m.
B	1.015	2.715	RL of A = 550.500 m.

Find:-1) The true Reduced Level of B.

2) The combined correction for curvature and Refraction.

3) The collimation error.

4) Whether the line of collimation is Inclined upward or Downward. (06)

OR

Q. 2. (a) The following fore and back bearings were observed in traversing with a compass in place where Local Attraction was suspected. Find the corrected FB and BB of lines using included angles. (06)

Line	AB	BC	CD	DE	EA
FB	158°30'	62°	342°	281°	210°30'
BB	339°	242°	163°	101°30'	30°

(b) Enlist the 3 Permanent adjustment of level and explain two peg method to make the line of collimation parallel to axis of the bubble tube. (06)

Q. 3. a) State and explain the fundamental axes of Theodolite. (04)

P.T.O.

- b) The following observations were made on vertically held staff with a Tachometer fitted with an anallactic lens. Find the distance AB and RLs of A & B. (08)

Inst. Station	Height of Instrument	Staff Station	WCB	Vertical Angle	Hair Readings	Remarks
M	1.750	A	65° 30'	+ 9° 20'	2.350, 3.150, 3.950	R.L. of M = 173.250 m
		B	128° 15'	+ 4° 20'	1.750, 2.250, 2.750	

OR

- Q. 4. a) What is Total station, explain Area measurement function with total station. (06)

- b) Find the area of the closed traverse with the help of following data, use Independent co-ordinate method: (06)

Side	Latitude	Departure
AB	+225.5	+120.5
BC	-245.0	+210.00
CD	-150.5	-110.5
DA	+170.0	-220.0

- Q.5.a) Define Curve. Classify the different types of curves with sketches. (06)

- (b) Two tangent intersects at chainage of 1750 m. The angle of intersection is 152°, calculate all data necessary for setting out curve of 246 m by the deflection angle method. The peg interval is considered as 25 m. Prepare a setting out table if the least count of vernier is 20". Apply check also. (07)

OR

- Q. 6. a) Explain the method of setting out curve by offset from Long Chord. (06)

- (b) Two tangent intersect at a chainage of 1000m, the deflection angle being 30° calculate all the necessary data for setting out circular curve of radius 200 m by the method of offset from chord produced taking peg interval of 20 m. (07)

- Q. 7. a) Explain with sketch if needed: (4+3 =07)

- Significance of horizontal and vertical control in building construction
- Explain how the setting of coordinates with global positioning System is done

- b) Write a short note on BeiDou (SBPS) with any four points. (06)

OR

- Q. 8. a) Describe the procedure of setting out Canal line with sketch. (06)

- b) Explain three segment of SBPS (Space based Position System) and Explain Galileo

System (07)