

Total No. of Questions : 4]

SEAT No. :

PD9

[Total No. of Pages : 2

[6409]-202

S.E. (Civil) (Insem)

SURVEY

(2019 Pattern) (Semester-IV) (201009)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2 Q.3 or Q.4.
- 2) Neat sketches must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data if necessary.
- 5) Use of electronic pocket calculator is allowed.
- 6) Use of cell phone is prohibited in examination hall.

**Q1)** a) Describe the various methods of plane table surveying. Under what conditions each is preferred? [4]

b) The following levels were observed during leveling on sloping ground. 0.475, 0.990, 1.220, 1.755, 2.570, 0.780, 1.250, 1.985, 2.855. 1.155, 1.850, 2.235, 2.995. [6]

i) Tabulate the given readings and find out Reduced levels if RL of Bench mark is 150.5 m.

ii) Find of slope of the ground if the distance between first and last point is 350 meter.

c) Define the following terms : [5]

- i) Fore Bearing
- ii) Orientation
- iii) Meridian
- iv) Local Attraction
- v) Reduced Level

OR

**Q2)** a) State the following terms Dip and Declination? State its effects of True Bearing? [4]

b) An observer standing on deck of a ship just sees a lighthouse. The top of light house is 42 m above sea level and height of observer eye is 6 m above sea level. Find the distance of observer from lighthouse? [5]

P.T.O.

- c) Find which station is free from local attraction and work out correct bearings. [6]

Line	AB	BC	CD	DE	EA
F.B.	191°45'	39°30'	22°15'	242°45'	330°15'
B.B	13°	222°30'	200°30'	62°45'	147°45'

- Q3) a) The measured length and bearing of the sides of a closed traverse ABCDEA run in an anticlockwise direction and are tabulated below. Calculate length of line CD & DE? [7]

Line	AB	BC	CD	DE	EA
Length (m)	298.7	205.7	?	?	213.4
Bearing	0°0'	N 25°12'E	S 75°6'W	S 56°24'E	N 35°36'E

- b) State Bowditch Rule for making corrections of consecutive coordinates of a closed traverse. [4]  
 c) Explain the detailed steps and procedure of Temporary adjustments of a theodolite? [4]

OR

- Q4) a) Describe how the area of a closed traverse is calculated using independent coordinates? [4]  
 b) The Length and Bearings of a closed traverse KLMNK was surveyed with a transit theodolite. The readings are recorded in the following Table. [6]

Find Consecutive coordinates

Line	Length	Included angle	Bearing
KL	255m	$\Delta K=74^\circ 16' 24''$	128°30'
LM	656m	$\Delta L=68^\circ 41' 16''$	
MN	120m	$\Delta M=93^\circ 18' 16''$	
NK	668m	$\Delta N=123^\circ 42' 00''$	

- c) State different uses of theodolite. Explain anyone in detail? [5]

