

Code: 9A01303

B.Tech II Year I Semester (R09) Supplementary Examinations June 2016

SURVEYING
(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Describe the method of orienting plane table by back sighting.
(b) What do you understand by closing error of a compass traverse? Show how it can be adjusted by graphical method.
- 2 (a) Define the terms True and Magnetic bearing, back bearing and magnetic declination.
(b) Determine the values of included angles in the closed compass traverse ABCD conducted in the clockwise direction, given the following four bearings of their respective lines:

Line	F.B.
AB	40°00'
BC	70°00'
CD	210°00'
DA	280°00'

- 3 Explain the direct methods of contouring. Explain the advantages and disadvantages of these methods.
- 4 A two-level section has a formation width of 10 m and side slopes of 2:1. The transverse slope of the ground is 8:1. The central heights at 20 m intervals are 2 m, 2.4 m and 3.0 m. Find the volume of earth-work by both Trapezoidal and Simpson's methods in the length of 40 m.
- 5 The following observations were taken from stations P and Q.

Line	Length(m)	Bearing
PA	125.0	S30°30'W
PQ	200.0	N30°30'E
QB	150.5	N50°15'W

Calculate the length and bearing of AB, and also the angles $\angle PAB$ and $\angle QBA$.

- 6 The following readings were taken by a tacheometer with the staff held vertical. The tacheometer is fitted with Anallactic lens and the multiplying constant is 100. Find out the horizontal distance from A to B and the R.L of B.

Inst.station	Staff station	Vertical angle	Staff readings	Remarks
	B.M	-6°00'	1.100,1.153,2.060	R.L. of B.M = 976.00
A	B	+8°00'	0.982,1.105,1.188	

- 7 (a) Explain the term compound curve and its use.
(b) Derive the expressions for the elements of a compound curve.
- 8 (a) What are the precautions to be taken while using a total station?
(b) What are the sources of errors in total station surveying?
