

R09

Code: 9A01303

B.Tech II Year I Semester (R09) Supplementary Examinations December 2015

SURVEYING
(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Explain, with the help of neat sketch, the graduations of a prismatic compass and a surveyor's compass.
(b) Discuss the advantages and disadvantages of plane table surveying over other methods.
- 2 (a) Distinguish between closed and open traverse. Where each is used?
(b) The following angles were observed in clockwise direction in an open traverse:
 $\angle ABC = 124^\circ 15'$, $\angle BCD = 156^\circ 30'$, $\angle CDE = 102^\circ 00'$, $\angle DEF = 95^\circ 15'$ and $\angle EFG = 215^\circ 45'$. Magnetic bearing of the line AB was $241^\circ 30'$. What would be the bearing of line FG?
- 3 (a) Explain tacheometric method of locating contours with a neat sketch. Under what circumstances this method is preferred to.
(b) Explain in detail how the contour plan is used to calculate the capacity of a reservoir.
- 4 Compute the volume of the earth work in a road embankment 100 meters long from the following given data: The formation width 6 meters; side slope of banking 2 to 1.
Transverse slope of the ground 5 to 1; the mean height of the embankment 2 meters.
- 5 (a) Explain the principle and necessity of conducting trigonometric leveling.
(b) Explain the features and use of an electronic theodolite.
- 6 Find the difference in elevation between stations P and Q from the data given below. The stadia constants are $K = 100$, $C = 0.3$.

Instrument at	Staff at	Vertical angle	Stadia readings
A	P	$+3^\circ 15'$	1.355, 2.58, 3.935
	Q	$-1^\circ 45'$	0.985, 1.66, 2.335

- 7 (a) Explain the term degree of a curve.
(b) The chainage of the point of intersection and tangent point of a curve are 1083.585 m and 829.665 m respectively. The deflection angle of the curve is 48° . Compute the radius, the length of the long chord and apex distance.
- 8 Two stations A and B are 72 km apart. The elevation of the stations A and B are 372 m and 458 m respectively. The intervening ground has a uniform elevation of 328 m. Find the height of the signal required at B if the line of sight has to pass at least 3 m above the ground at all points.
