

Code: 9A01303

II B. Tech I Semester (R09) Supplementary Examinations, May 2012

SURVEYING
(Civil Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Explain the principle on which chain survey is based.
(b) What factors should be considered in deciding the stations of a chain survey?
- 2 (a) Explain the measurement principle in Electronic Distance Measurement (EDM).
(b) A chain was tested before starting the survey, and was found to be exactly 20 meters. At the end of the survey, it was tested again and was found to be 20.12 m. Area of the plan of the field drawn to a scale of 1 cm = 6 m was 50.4 sq. cm. Find the true area of the field in square meters.
- 3 (a) Define and explain the terms contour and contouring.
(b) The page of an old leveling book is shown in table. Many readings are missing or cannot be read clearly. Find the missing readings and complete the page.

Staff station	Back sight	Intermediate sight	Foresight	Rise	Fall	Reduced level	Remarks
P	1.785					100.000	BM
Q		X			X	99.720	
R	X		X	0.75		X	CP
S		1.635		X		100.700	
T	X		X	0.76		X	CP
U			1.315		X	101.170	

- 4 Offsets were taken from a survey line at 12 m intervals and the lengths of the offsets were (starting from the left): 0, 3.8, 4.4, 5.2, 4.8, 6.4, 5.9, and 0 m. Find the area between the survey line, the first and last offsets, and the boundary by the trapezoidal rule and Simpson's rule.
- 5 The top of a hill subtends an angle $9^{\circ} 30'$ at a point A. the same point on the top of the hill subtends an angle of $12^{\circ} 30'$ at a point B which is in direct line joining point A and the top of the hill. Distance AB was measured and found to be 1600m. Determine the elevation of the top of the hill and its distance from point A, given elevation of point A is 430.650 m.
- 6 (a) How will you find the constants of a tacheometer? Explain with neat sketch.
(b) What is an analytic lens? State the advantages and disadvantages of it?
- 7 A compound curve consists of two arcs, a 3° curve followed by a 4° curve, with the tangent intersecting at a deflection angle of 85° . The chainage of point of intersection is 1020.65 m. If the central angle of the first arc is $38^{\circ} 30'$, find the chainage of the tangent points. List the deflection angles to set out the first five points of the arc from the first tangent point at 20-m peg interval.
- 8 Discuss in detail the advantages and disadvantages of the total station surveying over traditional methods of surveying.
