

II B.Tech I Semester(R05) Supplementary Examinations, May/June 2010
SURVEYING
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define Surveying. Explain its importance for civil Engineers.
 (b) What is meant by Reconnaissance Survey.
 (c) A Chain was tested before starting a survey and was found to be exactly 30m. At the end of the Survey, it was tested again and found to measure 30.10m. The area of the plan of the field drawn to a scale of 1cm = 20m was 160 square centimeters. Find the true area of the field in square metres. [5+3+8]
2. (a) Explain the procedure of chaining. How will you record the measurements of Chain Survey. Enumerate the points to be kept in view while booking the field notes.
 (b) A Survey line BAC crosses a river, A and C being on the near and opposite banks respectively. A perpendicular AD 40m long is set out at A. If the bearings of AD and DC are $38^{\circ} 45'$ and $278^{\circ} 45'$ respectively and the chainage at A is 862m. find the chainage at C. [8+8]
3. (a) What are "temporary adjustments"?
 (b) Name the temporary adjustments of a level? Briefly explain them. [6+10]
4. (a) List the general methods of calculating area as,
 (b) Explain any one methods giving its advantages, limitation and suitability for a given type of work. [4+12]
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 1600 m. Determine the elevation of the top of the hill and its distance from point A, given elevation of point A is 430.650 m. [16]
6. A tacheometer is set up at an intermediate point on a traverse course PQ and the following observation are made on a vertical held staff

Staff station	Vertical angle	Staff intercept	Axial hair readings
P	$+8^{\circ} 36'$	2.350	2.105
Q	$+6^{\circ} 6'$	2.055	1.895

 The instrument is fitted with an anallactic lens and the constant is 100. compute the length of PQ and the reduced level of Q that of P being 321.50 m [16]
7. (a) Why are the curves provided. Explain different types of curves with neat sketches.
 (b) Two straights intersect at a chainage of 3500.5m with an angle of intersection of 156° . These two straights are to be connected by a simple circular curve of 200m radius. Calculate the data necessary by the method of offsets from the chords produced with a peg interval of 20m. Explain the procedure to set out the curve. [7+9]
8. What are the typical total station programs required to perform a variety of surveying functions explain them briefly? [16]
