BTS(C) – III – 09 – 064 – E

B. Tech Degree III Semester Examination, November 2009

CE 302 SURVEYING I
(2006 Scheme)

Time : 3 Hours   Maximum Marks : 100

PART A

(8 x 5 = 40)

I. (a) Explain briefly the principles of chain surveying.
    (b) What is meant by local attraction? How is it rectified?
    (c) Briefly explain profile leveling
    (d) What are the methods of contouring? Explain briefly.
    (e) With the help of neat sketch explain the working of box sextant.
    (f) Compare the mid ordinate rule and average ordinate rule for working out areas.
    (g) Explain the principle of anallatic lens.
    (h) What are the usual errors in theodolite surveying? Explain.

PART B

(4 x 15 = 60)

II. (a) What is an optical square? Explain with a sketch.
     (b) How is graphical adjustment of closing error done in a closed traverse?

OR

III. Given below are the bearings in a closed traverse survey conducted with prismatic compass at a place where local attraction is suspected.
   At what stations do you suspect local attraction? Find the correct bearings of the lines.

Line	Fore Bearing	Back Bearing
AB	191^0 45'	13^0 00'
BC	39^0 30'	222^0 30'
CD	22^0 15'	220^0 30'
DE	242^0 45'	62^0 45'
EA	330^0 15'	147^0 45'

IV. The following consecutive readings were taken with a level and a 4m leveling staff on a continuously sloping ground at a common interval of 30m.
     0.585 on A, 0.936, 1.953, 2.846, 3.644, 3.938, 0.962, 1.035, 1.035, 1.689, 2.534, 3.844, 0.956, 1.579 and 3.016 on B.

The elevation of A was 520.450. Determine the gradient of line AB after making up a level field book.

OR

(Turn Over)
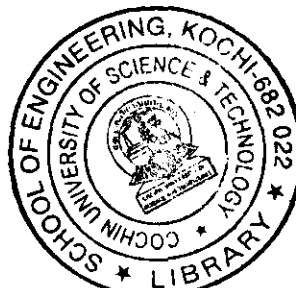
V.   (a)   Briefly explain the permanent adjustments of a dumpy level.
      (b)   How is interpolation of contours done.

VI.   The area within the contour lines at the site of a reservoir and the face of the proposed dam are as follows :

Contour in m	Area in m^2	Contour in m	Area in m^2
450	270	460	4,14,500
452	10,440	462	4,60,800
454	75,600	464	5,86,800
456	1,44,000	466	6,39,900
458	2,70,000		

Taking 450 as the bottom level of the reservoir and 466 as the water level, find the volume of water in the reservoir.

OR

VII.   (a)   Derive an expression for prismoidal formula for volume.
       (b)   Explain the working of Ceylon Ghat Tracer.

VIII.   Briefly explain the various permanent adjustments of a transit theodolite.

OR

IX.   (a)   What are the advantages of tachometric survey?
       (b)   What is a direct reading tachometer? Explain briefly.

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