

- IX. (b) Calculate the deflection angles from the following observations:

Line	Bearing
AB	N 42 deg. 20 min E
BC	N 30 deg. 00 min E
CD	S 82 deg. 40 min E
DE	N 50 deg. 00 min E

(12)

OR

- X. (a) What is tacheometry? What is the utility of an anallatic lens in a tacheometer? (10)
- (b) It was required to determine the distance between two points A and B by a tacheometer fitted with an anallatic lens. With the instrument at A and staff at B the following observations were made:

Vertical angle	+10° 46'
Staff intercept	1.800m

What is the horizontal distance AB? (10)

BTS(C)063(B)

B.Tech. Degree III Semester Examination
November 2002

CE 302 SURVEYING I
(1999 Admissions onwards)

Time: 3 Hours

Maximum Marks: 100

- I. (a) What are the sources of errors in chain surveying? What precautions would you take to guard against them? (10)
- (b) A 20m chain was tested before the commencement of the day's work and found to be correct. After chaining 840m, the chain was found to be 0.08m too long. At the end of the day's work, after chaining a total distance of 1376m the chain was found to be 0.12m too long. What was the true distance chained? (10)
- OR
- II. (a) Describe how you would range a chain line between two points which are not intervisible. (7)
- (b) Explain the terms:
 Check line, Base line,
 Tie line, and
 Oblique offsets. (6)
- (c) A 50m tape is suspended between the ends under a pull of 15 kilograms. The weight of the tape is 1.5 kilograms. Find the corrected length of the tape between its ends. (7)
- III. (a) Explain clearly the differences between a prismatic compass and surveyor's compass. (8)

(Turn over)

- III (b) The following bearings were taken in running a compass traverse.

Line	Fore bearing	Back bearing
AB	124°30'	304°30'
BC	68°15'	246°0'
CD	310°30'	135°15'
DA	200°15'	17°45'

At what stations do you suspect local attraction? Find the correct bearings of the lines and also compute the included angles. (12)

OR

- IV (a) Explain the various methods of plane tabling? (6)
- (b) What are the factors upon which accurate orientation of a plane table depends? (6)
- (c) State the two-point problem. How is it solved? (8)

- V (a) Explain the process of reciprocal levelling and state its advantages. (8)

- (b) The following consecutive readings were taken with a dumpy level:

0.450, 1.120, 1.875, 2.905, 3.685, 4.500, 0.520, 2.150, 3.205 and 4.485.

Given that the reduced level of the change point was 250.000. Rule out a page of a level field book and enter the above readings. Calculate the reduced levels of the points by rise and fall method. (12)

OR

Contd.....3.

- VI (a) Describe with the help of sketches, the characteristics of contours. (10)

- (b) Describe various methods of contouring. Discuss the merits and demerits of each. (10)

- VII (a) What is Simpson's rule? Derive an equation for the same. (8)

- (b) The following perpendicular offsets were taken from a chain line to a boundary:

Chainage (M)	0	10	20	30	45	60	80	100
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Offsets (M)	5.6	9.0	10.5	11.4	10.2	10.8	8.6	6.4
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Calculate the area between chain line and boundary by Simpson's rule and trapezoidal rule. (12)

OR

- VIII Write short notes on:

- (i) Mass haul curve
- (ii) Box sextant
- (iii) Planimeter
- (iv) Ceylon ghat Tracer
- (v) Pentagraph (20)

- IX (a) Describe the temporary adjustments of a theodolite. (8)

Contd.....4.