Code No: NR210104 **NR**

II B.Tech I Semester Supplementary Examinations, May 2005
SURVEYING-I
(Civil Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Draw the Conventional signs for the following:
   i. Chain line
   ii. Electric line
   iii. Telegraphic line
   iv. Lake
   v. Embarkment.

   (b) A 20 m steel tape was standardized at 20^0C and a standard pull of 80N. Its area of cross section was $4mm^2$ and density of steel was 0.077 N per C.C.(cm^3). It is supported at 20 m intervals and the mean temperature of survey is 30^0C

   Co-efficient of linear expansion of steel is 0.0000031 per degree C, and Young's Modulus of steel is $2x10^5 N/mm^2$. If a length of 2403 m is measured find its correct length.

2. (a) Compare the Surveyor's Compass with the Prismatic Compass.

   (b) The following readings were observed in a closed traverse where local attraction is suspected:

LINE	FORE BEARING	BACK BEARING
AB	$N89^0E$	$N89^0W$
BC	$S01^0W$	$N01^0W$
CD	$S50^0W$	$N51^0W$
DE	$N69^0W$	$S67^0W$
EA	$N01^0W$	$S01^0W$

   Assuming Bearing of AB needs no correction, find the included angles and the correct bearings of the other sides.

3. (a) i. What are ISOGONIC LINES?
   ii. What is DIP? How does it vary?

   (b) The Magnetic bearing of a line is 200^0 when its True bearing is 204^0. If after 30 years the Magnetic declination was 5^0 W, what would be its Magnetic bearing?

4. (a) What are
   i. The Great Triangle
   ii. The Great Circle and

iii. Strength of fix as applicable to the plane Table Surveying.

(b) Explain the TWO POINT PROBLEM with neat sketches.

5. A series of offsets were taken from the chain line to a curved boundary line at 15 m intervals in the following order:
   0, 1.3, 2.5, 4.9, 7.1, 7.4, 3.8, 0
   Compute the area between the chain line, the curved boundary line and the end offsets by

   (a) Trapezoidal Rule,

   (b) Simpson's Rule.

6. Find the net area of cutting and filling on the side of a hill section for a base width of 10m, given the side slopes are 1:2 in both cutting and filling and the ground is sloping at 1 in 7. Vertical cutting depth at the centre of the cross section is 1.5m.

7. Explain the CEYLON GHAT TRACER with neat figures.

8. Explain in brief:

   (a) Well Conditioned Triangle.

   (b) Reciprocal Ranging.

   (c) Compensating errors.

⋆ ⋆ ⋆ ⋆ ⋆