

**B. Arch. (3<sup>rd</sup> Semester) Final Examination, 2012**

**Subject: Surveying (CE-302A)**

Full Marks: 35

Time 2 hours

Two marks reserved for neatness

Answer question No. 1 and any four from the rest.

1) Write short notes on the following (Any three)

- a) Orientation of plane table
- b) Direct ranging
- c) Indirect ranging
- d) Chaining on sloping ground
- e) Hypotenusal allowance
- f) Triangulation

(3x3=9)

2. A line measured with a steel tape which was exactly 15m at 20°C and a pull of 50N and the measured length was 500.00m. The field temperature was 40°C and applied pull was 100N. Assume weight of the tape 400g, Cross-sectional area = 0.02 cm<sup>2</sup>, co-efficient of thermal expansion = 0.0000117/°C and modulus of elasticity = 21x10<sup>6</sup> N/cm<sup>2</sup>. Find the true length of the line.

(6)

- 3) a) Show how field book is noted.
- b) Mention the criteria for selection of a station during survey work.
- e) Describe cross-staff survey

(2+2+2=6)

- 4) a) State Bowditch rule.
- b) ABCDEA is a regular anticlockwise pentagon. The bearing of the line AB is 240 degree. Find the true bearings of the lines if the area has a declination 1°East.

(1+5=6)

- 5) a) Deduce the expression of reciprocal levelling?
- b) Describe how parallax can be eliminated.
- c) Mention the operational sequences during leveling work with a dumpy level.

(2+2+2=6)

6) Following readings were obtained during a leveling work.  
2.00, 2.30, 2.60, 1.50, 3.10, 3.60, 2.90, 1.80, 2.80, 2.50, 3.00, 2.50. The initial reading was taken on a bench mark with Reduced Level (RL) of 100.00m. The instrument is shifted after 4<sup>th</sup>, 7<sup>th</sup> and 10<sup>th</sup> reading. Complete the entry in the level book and calculate the reduced level of the points with necessary check.

(6)

7) What is plane table survey? Mention the advantages and disadvantages of plane table survey. Describe the method of resection of plane table survey with neat sketch.

(1+2+3=6)