

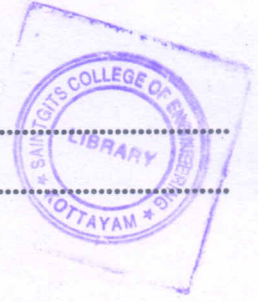
CE (New)

G 1550

(Pages : 2)

Reg. No.....

Name.....



**B.TECH. DEGREE EXAMINATION, MAY 2015**

**Fourth Semester**

Branch : Civil Engineering

CE 010 405—SURVEYING—II (CE)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.  
Each question carries 3 marks.*

1. Explain phase of signals.
2. What do you mean by base net ?
3. List the different methods of locating soundings.
4. What is the principle of total station ?
5. What do you mean by Astronomical triangle ?

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.  
Each question carries 5 marks.*

6. What do you mean by strength of figure ?
7. Explain method of correlates.
8. Differentiate between microwave and visible light instruments.
9. Explain the concept of remote sensing.
10. Define and explain celestial sphere.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.  
Each full question carries 12 marks.*

11. Explain eccentricity of a signal. How would you correct the observations made upon an eccentric signal ?

*Or*

12. How could you determine the intervisibility of triangulation stations ? Give in a tabular form the classification of triangulation based upon accuracy.

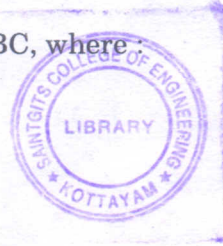
**Turn over**

13. Determine the most probable values of the angles of a triangle ABC, where

$$\angle A = 62^\circ 14' 12'', \text{ Weight} = 1$$

$$\angle B = 48^\circ 12' 14'', \text{ Weight} = 3$$

$$\angle C = 69^\circ 33' 28'', \text{ Weight} = 2$$



Or

14. Find the most probable values of angles  $\alpha, \beta, \gamma$  from the following observations at one station :—

$$\alpha = 38^\circ 12' 26.5'', \text{ Weight} = 1$$

$$\beta = 32^\circ 45' 13.2'', \text{ Weight} = 2$$

$$\alpha + \beta = 70^\circ 57' 38.6'', \text{ Weight} = 2$$

$$\alpha + \beta + \gamma = 126^\circ 28' 0.6'', \text{ Weight} = 3$$

$$\beta + \gamma = 88^\circ 15' 37.8'', \text{ Weight} = 1$$

15. Describe the various methods of plotting the soundings.

Or

16. Discuss the principle of electromagnetic distance measurement. Explain how EDM lines are reduced.

17. (a) Explain how do you determine the focal length of the Camera lens of a photo-theodolite.

(5 marks)

- (b) The distance from two points on a photographic print to the principal line are 42.36 mm to the left and 38.16 mm to the right. The angle between the points measured with a transit is  $30^\circ 45'$ . Determine the focal length of lens.

(7 marks)

Or

18. The scale of an aerial photograph is 1 cm = 160 m and the size of the photograph is 20 cm  $\times$  20 cm. If the longitudinal lap is 65% and side lap = 35%, determine the number of photographs required to cover an area of 232 km<sup>2</sup>.

19. Determine the azimuth and altitude of a star with the following data :—

$$\text{Latitude of observer} = 48^\circ \text{ N}$$

$$\text{Hour angle of star} = 43^\circ$$

$$\text{Declination of star} = 18^\circ 20' \text{ N}$$

Or

20. Write notes on :

(i) Spherical triangle.

(ii) Zenith and Nadis.

(iii) Declination.

(iv) Right ascension.

(5  $\times$  12 = 60 marks)