

Reg. No.

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B.E. / B.TECH. DEGREE EXAMINATION, MAY 2023

Third Semester

CE18303 – PLANE AND GEODETIC SURVEYING*(Civil Engineering)***(Regulation 2018A)****TIME: 3 HOURS****MAX. MARKS: 100**

- CO1** To describe the rudiments of various surveying and its principles.
CO2 To summarize the concepts of Theodolite Surveying and computation of area and volume calculation.
CO3 To enumerate the procedure for establishing horizontal and vertical control and its adjustment procedure.
CO4 To apply the modern surveying methods for recording observations, data acquisition, data processing and other field applications.
CO5 To apply the knowledge in Route surveying, Hydrographic surveying and Field Astronomical surveying in the field measurements.

PART- A(10x2=20Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. Discuss the applications of Surveying.	1	2
2. Distinguish between true bearing and magnetic bearing.	1	2
3. Compare theodolite and tacheometer.	2	2
4. What is meant by transit in theodolite surveying?	2	2
5. Summarize the specifications of first order triangulation.	3	2
6. Distinguish between the observed value and the most probable value of a quantity.	3	2
7. Demonstrate the components of satellite signals.	4	2
8. What is the purpose of e-book in Total Station?	4	2
9. Distinguish between compound and reverse curves.	5	2
10. Write a short note on echo-sounding.	5	2

PART- B (5x 14=70Marks)

	Marks	CO	RBT LEVEL
11. (a) Explain in detail the working principle of prismatic compass in detail with neat sketch.	(14)	1	3

(OR)

- (b) The following consecutive reading were taken with a dumpy level: 1.904, 2.653, 3.906, 4.026, 1.964, 1.702, 1.592, 1.262, 2.542, 2.006, 3.145. The instrument was shifted after fourth and eighth readings. The first reading was

taken on the staff held on the B.M of R.L 100m. Calculate the R.L of the points and apply the arithmetical check.

- 12. (a)** Explain the tangential and stadia tachometry and How will you determine the stadia constants? **(14) 2 3**

(OR)

- (b)** Determine the area for the following observations by **(14) 2 3**
 (i) Trapezoidal rule
 (ii) Simpson's rule

Ordinate	O1	O2	O3	O4	O5	O6	O7	O8	O9
Distance(m)	0	10	20	30	40	50	60	70	80
Offset(m)	3.25	5.60	4.20	6.65	8.75	6.20	3.25	4.20	5.65

- 13. (a)** Describe the triangulation adjustment and explain the different conditions and cases with sketches. **(14) 3 3**

(OR)

- (b)** Explain the computations of traversing with help of Gale's table. **(14) 3 3**

- 14. (a)** Explain the various parts and applications of total station. **(14) 4 3**

(OR)

- (b)** Describe in detail about Anti-spoofing and Selective Availability. **(14) 4 3**

- 15. (a)** Explain the route survey for highway projects. **(14) 5 3**

(OR)

- (b)** Discuss about the celestial coordinate system. **(14) 5 3**

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

- 16.** Show which stations are affected by local attraction. Workout the correct bearing of closed traverse ABCDEA. **(10) 1 5**

Line	Fore Bearing	Back Bearing
AB	147° 30'	26° 45'
BC	74° 30'	253° 00'
CD	41° 30'	222° 45'
DE	312° 15'	132° 45'
EA	219° 15'	39° 15'