

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2021****Subject Code:3140601****Date:03/09/2021****Subject Name:Surveying****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Explain any three instruments of plane table survey with sketch	03
(b) List the fundamental lines of a theodolite and explain briefly the desired relationships between these lines	04
(c) Define closing error and explain balancing of Traverse.	07
Q.2 (a) Draw the neat sketch of simple circular curve showing various elements of it.	03
(b) State the trapezoidal rule and Simpson's rule. What is the limitation of Simpson's rule?	04
(c) Explain method of Intersection and Traversing for plane tabling	07

OR

- (c)** A closed traverse was conducted round an obstacle and the following observations were made. Work out the missing quantities **07**

Side	Length (m)	Azimuth
AB	500	98°30'
BC	620	30°20'
CD	468	298°30'
DE	?	230°0'
EA	?	150°10'

Q.3 (a) Explain Zero circle of planimeter	03
(b) List and explain different types of transition curves	04
(c) Calculate the ordinates at 10 metres distances for a circular curve having a long chord of 80 metres and a versed sine of 4 metres.	07

OR

Q.3 (a) What is the field procedure of the long chord method in setting a curve?	03
(b) Derive formula for height h and distance D in trigonometric leveling when two instruments are set at same level.	04

- (c) What is trigonometric leveling? Derive the equation for distance and RL of object when object is not accessible and instrument axis is at different level but in same vertical plane. 07
- Q.4** (a) Explain parallax bar 03
- (b) Differentiate between (i) Side slope and tranverse slope (ii) contour plan and contour gradient 04
- (c) Explain the method of correlates in theory of errors 07

OR

- Q.4** (a) Explain stadia method in tacheometry 03
- (b) Discuss the salient features of accidental errors. 04
- (c) What are the factors that affect the selection of site for base line? 07
- Q.5** (a) What are the various corrections for base line? Discuss what is base net 03
- (b) What do you mean by analytic lens? How are they useful in techeometer? 04
- (c) Explain Total station giving its uses and different functions 07

OR

- Q.5** (a) Define (i) geodetic surveying, (ii) base line, (iii) well-conditioned triangles 03
- (b) Explain the practical use and benefits of global positioning system (GPS) 04
- (c) Derive the equations for horizontal and vertical distances for inclined sights with staff vertical 07
