Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(OLD) • EXAMINATION – WINTER 2016

Subject Code:130601 **Date:02/01/2017**

Subject Name:Surveying

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 (a) Explain the procedure for method of traversing in a Plane Table. 07

(b) Describe the procedure for omitted measurements. 07

Q.2 (a) Explain the following Term:1) Compound Curve 2) Point of intersection 3) Mid ordinate 4) Apex Distance 5) Tangent Length 6) Transition Curve 7) Simple circular curve 07

(b) Explain the procedure of setting out building foundation. 07

OR

(b) Enumerate different types of the methods for measuring the volume and explain by prismoidal formula 07

Q.3 (a) The following are the length and bearings of the sides of a closed traverse PQRS. Find the length and bearing of line SP. 07

Line	Length (m)	Bearing
PQ	238.00	336°
QR	315.0	83°
RS	216.00	167°
SP	?	?

(b) Discuss the Repetition and reiteration method of horizontal angle measurement using Theodolite. 07

OR

Q.3 (a) Define Latitude and Departure. Differentiate between the dependent and independent coordinates. 07

(b) Prepare Gale's Traverse table to adjust the closing error of the close traverse ABCDA for the following data. 07

Line	Length (m)	Corrected (bearings)
AB	113	110°
BC	84	169°
CD	94	250°
DA	155	351°

Q.4 (a) What are the elements of simple circular curve? Define with figure and give their relationship. 07

(b) Two tangents intersect at a chain age of 2300m of the deflection angle being 27°. Calculate the following quantities for setting out a curve of radius 285m. 07

1) Tangent Length 2) Length of Long chord 3) Length of curve
4) Chain age of point of commencement and tangency 5)Apex distance

OR

Q.4 (a) Briefly discuss deflection angle method and offset from chord produced method of setting out simple curve. 07

(b) Two tangents intersect at a chain age 100 chains+15links and the deflection angle is 45°. a circular curve of 250 m radius is to be set out to connect to tangent. Calculate the necessary data for setting out the curve by method of deflection method Length of chain is 20 m and peg interval 20m. 07

Q.5 (a) Derive an expression for the distance and height for the trigonometric leveling in. case of inaccessible and instrument axis at same level. 07

(b) To determine the height of mobile tower a theodolite was kept at two stations P_1 and P_2 210m apart. P_1 being nearer to the mobile tower. The reading at the BM of RL 720 m were 1.45m from station P_1 and 2.15m from P_2. The vertical angles to the top of the mobile tower where $18^o30'$ and 8° 30' from stations P_1 and P_2 respectively. Find the horizontal distance & RL of the top of the mobile tower. 07

OR

Q.5 (a) Explain the different instruments used in measurement of sounding. 07

(b) Explain procedure for area measurement by planimeter. Also discuss components of planimeter 07

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