

(Please write your Exam Roll No.)

Exam Roll No. 40818003416

END TERM EXAMINATION

THIRD SEMESTER [B.TECH] DECEMBER 2017

Paper Code: ETCE-209

Subject: Surveying

Time: 3 Hours

Maximum Marks: 75

Note: Attempt any five questions including Q.no.1 which is compulsory.

- Q1 Attempt the following questions: (5x5=25)
- (a) What are the principles and methodologies used in tachometric survey?
 - (b) What is the topographic map and its importance in surveying?
 - (c) Describe the various methods of contouring. Also explain with neat sketches, the uses of contour maps.
 - (d) Differentiate between methods of repetition and reiteration used in theodolite survey.
 - (e) What are the major steps involved in planning of a survey?

- Q2 (a) What is the significance of Laplace station in triangulation? Illustrate various method of measuring baselining. (8)
- (b) Explain briefly and write short notes on DGPS. (4.5)

- Q3 The traverse data containing lengths and interior angles of a traverse are given below. The bearing of line PQ was observed and recorded as S 36° 12' 30" E. Check the traverse for angles and closing errors, if any. Find the correct latitudes and departure by transit method. (12.5)

Line	Length	Station	Included Angle
PQ	102.8	P	131° 14' 30"
QR	98.4	Q	84° 19' 25"
RS	110.8	R	116° 35' 25"
ST	82.8	S	119° 58' 05"
TP	113.29	T	87° 54' 0.5"

- Q4 (a) What is the principle of Plane Table surveying? Explain two-point and three-point problems by mechanical and graphical method. (8.5)
- (b) What factors should be considered by the surveyor when setting the specifications for accuracy on a given project? (4)

- Q5 What is 'closing error'? What are the different methods of balancing the closing error in a closed traverse? Explain any one method. (12.5)

- Q6 (a) Write short note on: (i) Transition curve (ii) Vertical curves. (8)
- (b) Convert following bearings from W.CB to R.B. (4.5)
- (i) 210° 0' (ii) 450° 15' (iii) 135° 45'

- Q7 An offset is measured with an accuracy of 1 in 40. If the scale is plotting is 1 cm = 20, find the limiting length of the offset so that the displacement of the point on the paper from both sources of error may not exceed 0.25 mm. (12.5)

- Q8 (a) Explain temporary adjustment of theodolite. (5)
- (b) What are the usual principles of digitizing distance in a Total Station? Why is the reflector a corner cube prism? (7.5)

P