Reg. No. :

Question Paper Code: 31316

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 2015

Third Semester

Civil Engineering

01UCE306 – SURVEYING - I

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. State the principle of surveying.

2. What is well conditioned triangle?

3. Define local attraction.

4. What are the temporary adjustments in plane tabling?

5. Define Bench mark.

6. Enlist the classification of leveling.

7. Define contour.

8. Define contour gradient.

9. What are the sources of errors in theodolite?

10. What is the principle of stadia method?

11. (a) (i) Explain the principal of working from whole to part. (8)

(ii) What are the accessories used for a chain survey? Explain its each function. (8)

Or

(b) What is ranging? What are the methods of ranging a survey line? (16)

12. (a) Find out the station affected by the local attraction and work out the corrected bearing of the lines. The following are the observed bearing of the lines of a traverse *ABCDEA* with a compass in a place where local attraction was suspected.

LINE	FB	BB
AB	$191^0 45'$	$39^0 30'$
BC	$22^0 15'$	$222^0 30'$
CD	$22^0 15'$	$200^0 30'$
DE	$242^0 45'$	$62^0 45'$
EA	$330^0 15'$	$147^0 45'$

Find the correct bearing of the line and included angles. (16)

Or

(b) Define three point problem and how it is solved by tracing paper method. (16)

13. (a) Following consecutive staffs reading were taken with a level along a sloping ground line *AB* at a regular distance of 20*m* by using 4*m* leveling staff 0.352, 0.787, 1.832, 2.956, 3.758, 0.953, 1.766, 2.738, 3.872, 0.812, 2.325 and 3.137 on *B*. Rule out a page of level field book, enter the above reading *RL* of point *A* is 320.288 Calculate *RL* of all points by rise fall system, and work out the gradient of line *AB*. (16)

Or

(b) Explain, in details, the different types of leveling. (16)

14. (a) Explain with neat sketches the characteristics of contours and uses of contours. (16)

Or

(b) The following perpendicular offsets were taken at 10*m* intervals from a survey line to an irregular boundary line. 3.25, 5.60, 4.20, 6.65, 8.75, 6.20, 3.25, 4.20, 5.65.

31316

Calculate the area using average ordinate rule, trapezoidal rule and Simpson's rule. (16)

15. (a) Explain in detail about temporary adjustment of Theodolite. (16)

Or

(b) Determine the gradient from a point A to a point B from the following observations made with a tachometer fitted with an anallactic lens. The constant of the instrument was 100 and the staff was held vertically:

Inst. station	Staff point	Bearing	Vertical angle	Staff readings
P	A	134°	$+10^{o}\,32'$	1.360, 1.915, 2.470
	B	224°	$+5^{o}\,6'$	1.065, 1.885, 2.705

————————————

31316