Reg. No. :

Question Paper Code: 50136

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Third Semester

Civil Engineering

15UCE306 - SURVEYING

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The whole circle bearing of a line is 300º. Its quadrantal bearing is

    (a) S60ºE   (b) N60ºW   (c) N30ºW   (d) N60ºE

2. The real image of an object formed by the objective must be

    (a) at the centre of the objective   (b) at the optical centre of the objective
    (c) in the plane of the cross wire   (d) on the staff

3. Right deflection angle may be directly obtained by setting the instrument to be

    (a) 0º on back station   (b) 180º on back station
    (c) 90º on back station   (d) 270º on back station

4. The stadia method in a tacheometry is used to determine

    (a) horizontal angles   (b) vertical angles
    (c) horizontal distance   (d) horizontal and vertical distance

5. An ideal transition curve is a

    (a) cubic parabola   (b) cubic spiral   (c) parabola   (d) true spiral

PART - B (5 x 3 = 15 Marks)

6. Define well conditioned triangles.

7. Compare and contrast fly and check leveling.

8. Write about any three components of transit theodolite.

9. Mention the different systems of tacheometric mesurements.

10. Differentiate between compound and reverse curves.

PART - C (5 x 16 = 80 Marks)

11. (a) Explain with neat diagram the construction and working of (i) Optical square (ii) Prism square. (16)

Or

(b) The following are the fore and back bearings of lines observed in an unclosed traverse *ABCDE*.

Line	Fore bearing	Back bearing
AB	65^0 30'	245^0 00'
BC	106^0 00'	286^0 00'
CD	220^0 45'	40^0 30'
DE	210^0 20'	30^0 00'

Locate the position of local attraction and find the corrected bearings. (16)

12. (a) Explain the different methods of locating contours. (16)

Or

(b) The following staff readings were observed successively with level, the instrument having being moved after third, sixth and eighth readings: 2.228 ; 1.606 ; 0.988 ; 2.090 ; 2.86 ; 1.263 ;0.602 ; 1.982 ; 1.044 ; 2.684 m. Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of 432.384m. (16)

13. (a) Explain the temporary adjustment of a transit. (16)

Or

(b) Detail about the different methods of traversing. (16)

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14. (a) Two distances of 50 and 80m were accurately measured out and the intercepts on the staff between the outer stadia webs were 0.496 at the former distance and 0.796 at the later. Calculate the tacheometric constants. (16)

Or

(b) Explain how a subtense bar is used with a theodolite to determine the horizontal distance between two points. The horizontal angle subtended at a theodolite by a subtense bar with vanes 3m apart is 15'40". Compute the horizontal distance between the instrument and the bar. (16)

15. (a) Explain the functions and the requirements of a transition curve. (16)

Or

(b) Explain any two methods for setting out a simple circular curve. (16)

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