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Reg. No. : | | | | | | | | | | |

Question Paper Code: 53106

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Third Semester

Civil Engineering

15UCE306 - SURVEYING

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

PART A - (5 x 1 = 5Marks)

1. The whole circle bearing of a line is 300º. Its quadrantal bearing is CO1 -R

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

2. A relatively fixed point of known elevation above datum is called CO1 -R

(a) Bench mark (b) Reduced level (c) Reference point (d) Datum point

3. The horizontal circle in a theodolite is graduated in CO2 -R

(a) the quadrant system from 0 to 90 in the four quadrants

(b) the whole circle system from 0to 360

(c) the semi-circle system from 0 to 180 in the right and left halves

(d) A way similar to that in a prismatic compass

4. Movable air method is CO2 -R

(a) stadia method (b) tangential method

(c) axial air method (d) all the above

5. The long chord and tangent length of a circular curve of radius R will be equal if the angle of deflection is CO3 -R

(a) 30° (b) 60° (c) 120° (d) 150°

PART – B (5 x3= 15Marks)

6. Write the use of line ranger. CO1- R

7. Write the uses of contours. CO2- R

8. Write short note on " Dumpy Level". CO3 -U

9. What are the common errors and mistakes encountered in tachometry? Explain the precautions to be taken to eliminate them. CO4- R

10. Differentiate between compound and reverse curves. CO5 -R

PART – C (5 x 16= 80Marks)

11. (a) Explain with neat diagram the construction and working of CO1 -Ana (16)
(i) Optical square (ii) Prism square.

Or

(b) (i) Explain the various types of meridians used in compass survey and their advantages and disadvantages. CO1- U (8)

(ii) Convert the following whole circle bearings to reduced bearings. CO1- U (8)

67^{o} 30', 278^{o}45', 123^{o}55', 270^{o} 00', 326^{o}30', 180^{o}00.

12. (a) The following consecutive readings were taken with a level and 4.0m staff on continuously sloping ground at a common interval of 30 m : 0.780, 1.535, 1.955, 2.430, 2.985, 3.480, 1.155, 1.960, 2.365, 3.640, 0.935, 1.045, 1.630, and 2.545. The R.L. of the first point A was 180.750 m. Rule out a page of a level field book and enter the above readings. Calculate the reduced levels of the points by the collimation system and the rise and fall system. Also calculate the gradient of the line joining the first and the last points. CO2 -U (16)

Or

(b) Define contours and give characteristics of contours. CO2- U (16)

13.	(a)	(i) Describe the permanent adjustment of a theodolite to make the vertical axis truly vertical.	CO3 -Ana	(8)
		(ii) Explain the term closing error. How do you find its magnitude and bearing?	CO3- U	(8)
		Or		
	(b)	Detail about the different methods of traversing.	CO3- Ana	(16)
14.	(a)	Discuss about principles of sub tense method for vertical base observation.	CO4- U	(16)
		Or		
	(b)	Explain the basic system of Tachometry measurements with neat sketch.	CO4 -U	(16)
15.	(a)	Explain briefly the linear methods of setting out a circular curve.	CO5- U	(16)
		Or		
	(b)	Explain any two methods for setting out a simple circular curve.	CO5 -U	(16)

53106