Code: 15A01402

R15

B.Tech II Year II Semester (R15) Regular & Supplementary Examinations May/June 2018

SURVEYING – II

(Civil Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What is called axis signal correction?
(b) Mention the advantages of reciprocal observations over single observations.
(c) What are the different systems of tacheometric survey?
(d) List the merits of movable hair method in tacheometric survey.
(e) Write the different classifications of triangulation system.
(f) Name the various types of reference grid.
(g) What is meant by point of intersection?
(h) Define shift of a curve? Why it is needed.
(i) What are the two methods of modulating the carrier wave?
(j) Write the various components of GIS.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 An instrument was set up at P and the angle of depression to a vane 2 m above the foot of the staff held at Q was $5° 36'$. The horizontal distance between P and Q was known to be 3000 meters. Determine the R.L of the staff station Q, given that staff reading on a B.M of elevation 436.050 was 2.865 meters.

OR

3 Derive the expression for angular corrections of refraction and curvature based in single observation.

UNIT – II

4 A staff was held at a distance of 20 m and 60 m from the axis of a theodolite fitted with fixed stadia hair and the staff intercepts were observed as 0.198 and 0.600 respectively. Compute the constants of the tacheometers.

OR

5 Describe briefly about errors and precautions in tacheometric surveying.

UNIT – III

6 (a) Explain the principles of triangulation.
(b) What are signals? Classify them. Enumerate the requirements to be fulfilled by a signal.

OR

7 Explain briefly about how do you perform setting out a culvert.

UNIT – IV

8 Explain briefly about the Rankine's method of tangential angle for setting out a circular curve.

OR

9 A compound curve is to connect two straights having a deflection angle of 90°. As determined from the plan, the lengths of the two tangents are 350 meters and 400 meters respectively. Calculate the lengths of the two arcs if the radius of the first curve is being 300 meters.

UNIT – V

10 Explain briefly about the computation of distance from measurement of transit time.

OR

11 Explain the interaction of electromagnetic radiation with earth surface feature in terms of reflected and absorbed energy.

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