Code: 13A01405 **R13**

B.Tech II Year II Semester (R13) Supplementary Examinations December/January 2015/2016

SURVEYING – II

(Civil Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) What is the procedure of levelling by foot screws?

(b) What do you mean by the term ideal triangle?

(c) What is contour gradient?

(d) What is the purpose of a direct reading tacheometer?

(e) What is a deflection angle?

(f) Why the face left and face right observations are taken?

(g) What is the principle of Tacheometry?

(h) The staff readings on A and B are 1.735 and 0.965 respectively. Which point is higher?

(i) What is the degree of a curve?

(j) What do you mean by Triangulation?

PART – B

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

UNIT – I

2 Obtain an expression for the difference in level between two points by reciprocal vertical angle readings from two stations. Heights of instruments and targets should not be ignored.

OR

3 Obtain an expression for the difference of level between two points A and B, a considerable distance apart, B being higher, by vertical angle readings from the point A. Take into account the height of the instrument at A and the height of the target at B. What is the assumption made in obtaining the equation for difference of level?

UNIT – II

4 Describe the conditions under which tacheometric surveying is advantageous. Explain how to obtain tacheometric constants in the field. Up to what vertical angle may sloping distance by taken as horizontal distance without the error exceeding 1 in 200, the staff being held vertically and the instrument having an anallactic lens?

OR

5 What are errors in stadia surveying. Explain in detail.

UNIT – III

6 What is meant by 'base net'? Explain how you would extend a base line.

OR

7 Find the sag correction for 30 m steel tape under a pull of 80 N in three equal spans of 10 m each. Mass of one cubic cm of steel = 7.86 g/cm^3. Area of cross section of the tape = 0.10 sq.cm.

UNIT – IV

8 What are the common difficulties in setting out simple curves? Describe briefly the methods employed in overcoming them.

OR

9 A circular curve of 1000 m radius deflects through an angle of 40º. This curve is to be replaced by one of smaller radius so as to admit transition 200 m long at each end. The deviation of the new curve from the old at their mid-point is 1 m towards the intersection point. Determine the amended radius assuming that the shift can be calculated with sufficient accuracy on the old radius. Calculate the lengths of track to be lifted and of new track to be laid.

UNIT – V

10 What is an Electronic Total Station? Explain briefly about Total Station with the help of a sketch

OR

11 Explain the applications of remote sensing in:

(a) Resource exploration.

(b) Environmental Information.

(c) Study of natural hazards.

*****