

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

SURVEYING – II

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART - A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- Define co-efficient of refraction.
 - Define trigonometrical leveling.
 - Mention various types of errors in stadia surveying.
 - List out the different systems of tacheometric measurement.
 - Define triangulation figure.
 - What is meant by survey grid?
 - What is meant by peg interval?
 - What is meant by point of tangency?
 - Define amplitude modulation.
 - Define passive remote sensing.

PART - B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT - I**

- 2 The following reciprocal observations were made from two points P and Q:

Horizontal distance between P and Q	= 33128 m
Angle of depression of Q at P	= 6'20"
Angle of depression of P at Q	= 8'10"
Height of signal at P	= 4.87 m
Height of signal at Q	= 4.07 m
Height of the instrument at P	= 1.27 m
Height of the instrument at Q	= 1.34 m

Calculate:

- The R.L. of Q, if that of P is 1248.65 m.
- The average co-efficient of refraction at the time of observations. Take $R \sin 1'' = 30.88$ m.

OR

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

UNIT - II

- 4 Following observations were taken from two traverse stations by means of a tacheometer fitted with an anallactic lens. The constant of the instrument is 100.

Inst. Station	Staff station	Height of inst.	Bearing	Vertical angle	Staff reading
A	C	1.38	226°30'	+10° 12'	0.765, 1.595, 2.425
B	D	1.42	84°45'	-12° 30'	0.820, 1.840, 2.860

Co-ordinates of station A 212.3 N 186.8 W

Co-ordinates of station B 102.8 N 96.4 W

Compute the length and gradient of the line CD, if B is 6.50 m higher than A.

OR

- 5 Explain the principle of movable hair method in detail with neat sketch.

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UNIT - III

6 What is meant by a satellite station and reduction to centre? Derive expression for reducing the angles measured at the satellite stations to centre.

OR

- 7 (a) Explain horizontal control for setting out in detail.
 (b) Explain offset pegs with neat sketch.

UNIT - IV

8 Two straights AV and VB, having bearings $146^{\circ} 36'$ and $86^{\circ} 06'$ respectively intersect at V and are connected by a curve of 200 metre radius. The co-ordinates of A and B are as under:

Point	Co-ordinate (metres)	
	N	E
A	212.6	60.4
B	100.2	486.8

Give, in a tabular form the necessary calculations for setting out the curve by means of a 20° theodolite, if the chainage of A = 4262.5 metres and the pegs are to be at interval of 20 metres.

OR

- 9 The following data refer to a compound circular curve which bears to the right:
 Total deflection angle = 93° , degree of first curve = 4° , degree of second curve = 5° , point of intersection at 45+61 (20 m units). Determine in 20 metre units the running distance of the tangent points and the point of compound curvature, given that the latter point is 6+24 from the point of intersection at back angle of $290^{\circ} 36'$ from the first tangent.

UNIT - V

10 Explain in detail different types of EDM instruments.

OR

11 Explain in detail the different types of platforms in use in remote sensing.
