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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech II Year I Semester Regular Examinations Feb-2021

SURVEYING & GEOMATICS

(Common to CE & AGE)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a A tape 20 m long of standard length of 840F was used to measure a line. The mean temperature during measurement being 65.0. The measured distance was 882.10 meters. The following being the slopes. 6M

$2^0 10'$	For 100 m
$4^0 12'$	For 150 m
$1^0 6'$	For 50 m
$7^0 48'$	For 200 m
$3^0 0'$	For 300 m
$5^0 10'$	For 82.10 m

Find the true length of the line if the coefficient of expansion is 65×10^{-7} per 10F.

- b Calculate the sag correction for a 30 m steel under a pull of 100 N in three equal spans of 10 m each. Weight of one cubic meter of steel = 0.078N. Area of cross section of tape = 0.08sq.cm 6M
- OR**
- 2 a Briefly explain the principles of surveying? 6M
- b Write short notes on types of errors. 6M

UNIT-II

- 3 a Describe in detail how you would proceed in the field for Profile leveling. 8M
- b Describe in detail on interpolation of contour? 4M

OR

- 4 a In leveling between two points A and B on opposite sides of a river, the level was set up near A and the staff readings on A and B were 2.642m and 3.228m respectively. The level was then moved and set up near B, the respective staff readings on A and B were 1.086m and 1.664m. Find the true difference level of A and B. 7M
- b Write short notes on difficulty in leveling. 5M

UNIT-III

- 5 a Find the horizontal and vertical distances by tangential method when both angles are angles of elevation. 6M
- b How would you, determine the constants K and C of a Tachometer. 6M

OR

- 6 a Write the temporary adjustments of a theodolite. 5M
- b How do you measure horizontal angle between two points with the help of a theodolite by repetition method? 7M

UNIT-IV

- 7 a Write short notes on types of circular curves. 6M
- b Define degree of curve. Derive a relation between the radius and degree of a curve. 6M

OR

- 8 a Two tangents intersect at chainage 1250 m. The angle of intersection is 150°. Calculate all data necessary for setting out a curve of radius 250 m by the deflection angle method. The peg intervals may be taken as 20 m. prepare a setting out table when the least count of the Vernier is 20". **6M**
- b Calculate the data for field checking for the above problem. **6M**

UNIT-V

- 9 a Describe in detail about microwave instrument? **6M**
- b Describe in detail about visible light instrument? **6M**

OR

- 10 a Define the following terms: i) frequency ii) wave length **6M**
- b Define the following terms: i) cycle ii) period iii) phase of a wave **6M**

*** END ***