Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CE) (Sem.–4th)

**SURVEY-II**

Subject Code : CE-202

Paper ID : [A0606]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

## SECTION-A

1. **Answer briefly :**

   (a) Name the fundamental lines of a theodolite.

   (b) What are the advantages and disadvantages of movable hair method?

   (c) A rising gradient of 0.8% meets a falling gradient of 0.4%. Find length of vertical curve if the rate of change of grade is 0.1% per 30 m.

   (d) Name the various corrections to be applied to a measured base line.

   (e) What do you mean by 'Reduction to Centre'?

   (f) What are the requirements of a site selected for measurement of base line in triangulation?

   (g) What are the basic components of GIS?

   (h) Differentiate between active and passive remote sensing.

   (i) Differentiate between raster and vector data in GIS.

   (j) What is spire test?

## SECTION-B

2. Explain the re-iteration method to measure horizontal angle and how readings are recorded?





3. Define G.P.S. and discuss its various components.
4. Discuss various applications of remote sensing.
5. What is meant by degree of curve ? Derive its relationship with the radius of curve.
6. Explain the procedure to determine the elevation when the distance of the object can not be measured in trigonometric levelling.

## SECTION-C

7. A traverse survey was conducted and data obtained is given below :

| Line | PQ | QR | RS | ST | TP |
|---|---|---|---|---|---|
| Length (m) | 102.8 | 98.4 | 110.8 | 82.8 | 113.29 |
| Bearing | 143°47'30" | 48°06'37" | 344°41'44" | 274°39'31" | 192°33'18" |

Find the magnitude and direction of closing error.

8. $AT_1$ and $BT_2$ are two straight lines meeting at point I at an angle of 110°. Find the radius and tangent lengths of a curve touching the two lines and passing through a point P.

   Angle $T_1IP = 30°$

   Distance $IP = 70$ m

9. A tacheometer was set up at an intermediate point on the line PQ and following observations were taken on a staff held vertically.

| Staff Station | Vertical angle | Staff Intercept (m) | Axial Hair Reading (m) |
|---|---|---|---|
| P | + 9°30' | 2.250 | 2.105 |
| Q | + 6°00' | 2.055 | 1.875 |

The multiplying constant of instrument is 100 and additive constant is 0.

Find distance of Q from P and RL of P if RL of Q is 240 m. Also calculate gradient of line PQ.



StudentSuvidha.com
downloaded from
Download all NOTES and PAPERS at StudentSuvidha.com