

II B. Tech I Semester Supplementary Examinations, May - 2019
SURVEYING
 (Civil Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **FOUR** Questions from **Part-B**

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**PART-A**

- 1 a) What are the objects of Surveying?
- b) Distinguish between closed traverse and open traverse.
- c) Define contour interval and contour gradient.
- d) Define the terms i) face left and face right observations. ii) swinging and transiting the telescope.
- e) What are the elements of a simple circular curve?
- f) How do you compute areas along irregular boundaries?

**PART-B**

- 2 a) What is back bearing and what are the advantages of observing it in a traverse?
- b) For the following traverse, find the length of DE so the A, E and F may be in the same straight line:

| Line | Length in meters | R.B.        |
|------|------------------|-------------|
| AB   | 200              | S 84° 30' E |
| BC   | 100              | N 55° 18' E |
| CD   | 80               | N 18° 45' E |
| DE   | -                | N 29° 45' E |
| EF   | 150              | N 64° 10' E |

- 3 a) Explain the Principle of electro optical EDM
  - b) Distinguish clearly between closed traverse and open traverse
- 4 a) Explain briefly temporary adjustment of theodolite
  - b) What are the indirect methods of locating a contour? Explain any one briefly. The constant for an instrument is 1200 and the value of additive constant is 0.4 meters.
- 5 Calculate the distance from the instrument to the staff when the micrometer readings are 6.262 and 6.258, the staff intercept is 2.5m and the line of sight is inclined at + 60 30', the staff being held vertically
- 6 A compound railway curve ABC is to have the radius of arc AB 600meters and that BC 400 meters. The intersection point V of the straights is located, and the intersection angle is observed to be 350 6'. If the arc AB is to have a length of 200meters. Calculate the tangent distances VA and VC.

- 7 A rectangular plot ABCD forms the plane of a pit excavated for road work. E is point intersection of the diagonals. Calculate the volume of the excavation in cubic meters from the following data:

| Point          | A    | B    | C    | D    | E    |
|----------------|------|------|------|------|------|
| Original level | 45.2 | 49.8 | 51.2 | 47.2 | 52.0 |
| Final level    | 38.6 | 39.8 | 42.6 | 40.8 | 42.5 |

Length of AB = 50 m and BC = 80 m.

