

Code No: 153BV

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year I Semester Examinations, September - 2021

SURVEYING AND GEOMATICS

(Civil Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any five questions**  
**All questions carry equal marks**

- - -

- List out the methods of Ranging and explain with neat sketches. [15]
- The following bearings were observed in a closed traverse. Find the included angles and correct the bearings of the lines. [15]

| Line | FB                   | BB                   |
|------|----------------------|----------------------|
| AB   | 140 <sup>0</sup> 45' | 318 <sup>0</sup> 15' |
| BC   | 216 <sup>0</sup> 30' | 38 <sup>0</sup> 00'  |
| CD   | 209 <sup>0</sup> 15' | 30 <sup>0</sup> 15'  |
| DE   | 319 <sup>0</sup> 45' | 139 <sup>0</sup> 45' |
| EA   | 60 <sup>0</sup> 15'  | 240 <sup>0</sup> 15' |

- List out the methods of contouring and explain about any one method in detail with a neat sketch. [15]
- The following offsets were taken from a survey line to a curved boundary line:

|              |     |     |     |     |     |     |     |     |     |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Distance (m) | 0   | 5   | 10  | 15  | 20  | 30  | 40  | 60  | 80  |
| Offset (m)   | 2.5 | 3.8 | 4.6 | 5.2 | 6.1 | 4.7 | 5.8 | 3.9 | 2.2 |

Find the area between the survey line, the curved boundary line and the first, last offsets by a) Trapezoidal rule b) Simpson's rule [7+8]

- How can the height of a tower be determined when it is inaccessible? [15]
- The following data were collected while running a closed traverse ABCDA. Determine the missing data. [15]

| Line | Length (m) | Bearing              |
|------|------------|----------------------|
| AB   | 330        | 181 <sup>0</sup> 25' |
| BC   | ?          | 89 <sup>0</sup> 50'  |
| CD   | 411        | 355 <sup>0</sup> 00' |
| DA   | 827        | ?                    |

- Explain the function of the following curves:  
a) Simple circular curve      b) Compound curve  
c) Reverse curve                d) Transition curve      e) Vertical curve [15]
- Explain about the photographic mapping by using:  
a) stereo plotting instruments                b) mosaics. [8+7]

---ooOoo---