

R18

Code No: 153BV

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year I Semester Examinations, February -2024

SURVEYING AND GEOMATICS

(Civil Engineering)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) What are the objectives of surveying? [2]
- b) Explain the principles of surveying. [3]
- c) Define contouring. [2]
- d) Elaborate the terms i) level surface ii) Datum iii) mean sea level [3]
- e) Differentiate between take left and take right. [2]
- f) What is mean by transiting? [3]
- g) List out the error in total station survey. [2]
- h) Write the types of EDM instrument. [3]
- i) Define camera axis in photogrammetry. [2]
- j) Define relief displacement. [3]

PART – B

(50 Marks)

- 2.a) Distinguish between surveyor's compass and prismatic compass.
- b) Explain briefly about Topographical survey and Hydrographic survey. [5+5]

OR

3. The following bearings were observed while traversing with compass. Calculate the interior angles. [10]

Line	F.B	B.B
AB	45° 45'	226° 10'
BC	96° 55'	277° 5'
CD	29° 45'	209° 10'
DE	324° 48'	144° 48'

- 4.a) The length of line measured by 20m chain was found to be 350m. Find the true length of a line if the chain is used is 5cm too long.
- b) Explain briefly about reciprocal levelling. [5+5]

OR

- 5.a) Describe the characteristics of contours.
- b) Derive an expression for curvature and refraction correction. [5+5]

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6.a) Describe about the temporary adjustments of theodolite.

b) Explain trigonometrical levelling when base is accessible and inaccessible. [5+5]

OR

7. What do you mean by adjusting a traverse? Discuss Bowditch's method and transit method with clear illustration. [10]

8.a) Explain the types of curves and their necessity.

b) Explain the tangential method of tachometry. [5+5]

OR

9.a) Explain the features of an electronic tachometer and its functions.

b) Write Advantage and applications of total station. [5+5]

10.a) Obtain expression for tilt displacement.

b) Explain various applications in photogrammetry. [5+5]

OR

11. Vertical photographs were taken from a height of 3048m, the focal length of camera lens being 15.24cm. If the prints were 22.86×22.86 cm and the overlap 60%, what is the length of the air base? What would be the scale of the print? [10]

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