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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

Course Code: CE307  
Course Name: GEOMATICS

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer any two full questions, each carries 15 marks.*

Marks

- 1 a) Explain any two methods of traversing by fast needle method. (7)
- b) The following are the corrected consecutive coordinates of a closed traverse ABCDEA. Calculate the independent coordinates. Assume that the independent coordinates of A are (500N, 200E) (8)

Line	Latitude		Departure	
	N	S	E	W
AB		365.30	626.30	
BC	489.60		940.40	
CD	990.60			762.70
DE		538.30		777.00
EA		576.60		27.00

- 2 a) Give the steps involved in the setting out of a simple curve by successive bisection of arcs. (5)
- b) Two tangents intersect at chainage of 1200m, the deflection angle being 42°. Compute all the data necessary to set out a curve of radius 300m by Rankine's method. The peg interval is 30m. (10)
- 3 a) Elaborate the steps in the computation of Gales traverse table. (8)
- b) The chainage of intersection of two straight lines having deflection angle 55° is 1000m. If the radius of the curve is 400 m, calculate the five elements of the simple curve and the chainages of point of curve and point of tangency. (7)

**PART B***Answer any two full questions, each carries 15 marks.*

- 4 a) Illustrate the principle of working of GPS. (8)

- b) Explain the satellite signal structure with suitable sketch. (7)
- 5 a) Explain the steps to conduct rapid static survey. (8)
- b) What is a visibility diagram? Give a sample visibility diagram. (7)
- 6 a) Enumerate four major GPS errors and biases and the methods to eliminate them. (8)
- b) What are the steps involved in the field operations of GPS survey. (7)

**PART C**

*Answer any two full questions, each carries 20 marks*

- 7 a) Illustrate the various stages of an idealised remote sensing system. (10)
- b) Distinguish between spectral and spatial resolution. (5)
- c) What are the applications of remote sensing? (5)
- 8 a) What is GIS and what are the components of GIS? (7)
- b) Give an overview of the GIS operations. (9)
- c) What is buffering and what are its applications? (4)
- 9 a) Distinguish between along track and across track scanning. (6)
- b) What is geometric transformation and how is its quality determined? (6)
- c) Compare the vector and raster data representations with suitable sketches. (8)

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