Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018
Course Code: CE307
Course Name: GEOMATICS (CE)

Max. Marks: 100   Duration: 3 Hours

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

Marks

1 a) Distinguish between closed traverse and open traverse. (5)

  b) A closed traverse ABCDA is conducted in field. The survey details are as given below. (10)

Line	Length (m)	Bearing
AB	371	$0^0 42'$
BC	164	$94^0 42'$
CD	245	$183^0 04'$
DA	192.5	$232^0 51'$

  Compute the coordinates for the traverse by applying correction to constitutive coordinates by Bowditch's rule.

2 a) Explain the graphical method of balancing of traverse for compass survey. (5)

  b) Explain Rankine's method of setting out of a simple curve. (5)

  c) What are the requirements of transition curve? (5)

3 a) Show the elements of compound curve with a neat sketch. (5)

  b) Two roads having deviation angle 40^0 at apex point V are to be joined by a 300 m radius circular curve. If the chainage of the apex point is 1200.2 m, calculate the ordinates from long chord at 15 m interval to set out the curve. (10)

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

4 a) Explain the types of Global Navigational Satellite Systems. (7)

  b) Explain the components and principles of GPS. (8)

5 a) How is receiver position located by satellite ranging? (4)

  b) What are the errors and biases of GPS? (7)

  b) Explain DGPS. (4)

6 a) What are the various GPS surveying Techniques? Compare the various techniques. (10)

  b) Explain the planning and preparation phases of GPS Survey. (5)

PART C
Answer any two full questions, each carries 20 marks

7 a) What is electromagnetic spectrum? State the wavelength regions, along with their (8)

uses, for remote sensing applications.

b) Differentiate between active and passive remote sensing. (6)

c) Explain remote sensing observation platforms. (6)

8   a) Explain the energy interactions with atmosphere and earth. (6)

b) What are the various resolutions in remote sensing? (8)

c) What are the application areas of GIS and remote sensing? (6)

9   a) What are the components of GIS? (6)

b) Describe briefly the raster and vector data structures. Discuss their relative advantages and disadvantages. (8)

c) Explain Geographic and Projected coordinate systems. (6)

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