Reg No.:

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY FIFTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 20

Name

**Course Code: CE307** 

**Course Name: GEOMATICS (CE)** 

Max. Marks: 100

Duration: 3 Hours

# PART A

# Answer any two full questions, each carries 15 marks

- 1 a) Distinguish between closed traverse and open traverse.
  - b) A closed traverse ABCDA is conducted in field. The survey details are as given (10) below.

Line	Length (m)	Bearing
AB	371	0 <sup>0</sup> 42'
BC	164	94 <sup>0</sup> 42'
CD	245	183 <sup>0</sup> 04'
DA	192.5	232 <sup>0</sup> 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<sup>0</sup> at apex point V are to be joined by a 300 m (10) 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.

# PART B

#### Answer any two full questions, each carries 15 marks

4	a)	Explain the types of Global Navigational Satellite Systems.								
	b)	) Explain the components and principles of GPS.								
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	(10)							
		techniques.								
	b)	Explain the planning and preparation phases of GPS Survey.								

## 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)

#### Page 1 of 2

Marks

(5)

	State of the second	~			
8	11000	tor	remote	concing	applications.
1	uovo.	101	Temote	Sousing	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?							
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 relat	ive (8)						

advantages and disadvantages.c) Explain Geographic and Projected coordinate systems.

(6)

Bearing	Length (m)	Linc	
0242	152	4.6	
Chybro .	164		
183°041	245	- CD	
· 120050		1.17	

sativen nego basis

Compute the coordinates for the traverse by applying connetion to constitutive control area by Rowditch's rule.

Reclain the graphical method of balancing of maverae for compass survey.

b) F-quan-Rashmei's method of soung out of a simple curve.

When the function is a manufactured curve?

a) Show the elements of compound curve with a near stetch.
b) If which is avoing deviation angle 40<sup>9</sup> at apex point V are to be joined by a 300 m<sup>-1</sup>.

entres involtanceary of the chamage of the apex prim is 1200.2 m, calculate the reconstent from long abord at 1.5 in unerval to set out the curve.

### PARTE

tesever any two full areations, each carries 15 marks

(?) •(8)		n nan Pinin N				Explanation grace Logiana in grace		
(4)			rar gnig ar	anilland with	benned permed	How Preserver		
$(\mathbb{N})$				Calert	o taraid bia a	oms side and mid-M		
(1, 1)		2. 2		1.4 <sub>100</sub>		Philip Instruction		
(01)		sth sunna.	Techniques? (	gaivenne	640 Reenev	Without and The	14	9
	4					and und 2.7		
(\$)			of GPS Survey	essuiq noin	none main processing			

### PARTIC

insper any two full questions, such carries 20 marks

When - electromagnous spectrum? State the wavelength regions, along with their (8