

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 2019

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 direct method without transiting in fast needle method of traversing with the help of suitable sketch. (7)
- b) Explain the elements of a simple circular curve, with a neat sketch. Derive relations between elements of a simple circular curve if radius and deflection angle is given. (8)
- 2 a) Adjust the closing error for the given traverse using Bowditch rule (10)

Line	Length (m)	WCB($^{\circ}$)
AB	160	46
BC	190	130
CD	200	220
DA	180	320

- b) A man travels from a point A, to west direction and reaches point B after 139.6m. Find the latitude and departure of line AB (5)
- 3 a) Explain Rankine's method for setting out simple circular curve. (10)
- b) Explain how you arrive at the length of transition curve based on rate of change of radial acceleration. (5)

PART B

Answer any two full questions, each carries 15 marks.

- 4 a) List down the components of GPS and explain the functions of each component. (10)
- b) Explain the principle of position determination by satellite ranging. (5)
- 5 a) List the errors in GPS surveying. Explain any four in detail. (10)
- b) Write a short note on visibility diagram. Illustrate with sketch. (5)

- 6 a) Explain the phases of GPS surveying. (10)
b) Explain static method of GPS surveying. (5)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Explain vector data model and raster data model. (8)
b) Describe the principle of remote sensing. Differentiate between active and passive sensors in remote sensing. (8)
c) Briefly explain the operations of GIS. (4)
- 8 a) What is meant by multispectral scanning? Explain along track and across track scanning. (10)
b) Explain image resolution and the different types. (10)
- 9 a) What is map projection in GIS? Explain the different types according to preserved property. (10)
b) Differentiate between geographic coordinate system and projected co-ordinate system. (5)
c) Briefly explain overlay in vector data analysis. (5)
