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| **Scheme of Valuation/Answer Key**(Scheme of evaluation (marks in brackets) and answers of problems/key) |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**V SEMESTER B.TECH (S) DEGREE EXAMINATION, MAY 2019 |
| **Course Code: CE307** |
| **Course Name: GEOMATICS** |
| Max. Marks: 100 |  | Duration: 3 Hours |
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| **PART A**  |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | Marks |
| 1 | a) | Successive bisection method steps (**3** mark) Figure (**2** mark) Formula for mid ordinate (**2** mark)  | (7) |
|  | b) | Explanation to error of closure with sketch (**2+1** mark).Closing error – 2.57 m (2.5 marks) , Orientation – N 57º W (2.5 marks) | (8) |
| 2 | a) | Figure (1 mark) Chainage of P.C=Chainage of P.I –tangent distance =1014.7m and P.T= Chainage of P.C + length of curve= 1381.03m (2 mark) Determination of length of curve(l) =366.33m and long chord (L)= 353.83m (2 mark) Formula for mid ordinate and ordinates at a distance (3 mark) Value of ordinates mid ordinate =41.25m, at x=20m, ordinate = 40.75m, at x= 40m, ordinate =39.24m... etc. and at x= 160m, ordinate = 7.85m (2 mark)  | (10) |
|  | b) | Figure with Proper marking (2marks). Basic relations for tangent distances corresponding to shorter radius and longer radius. (3 mark) | (5) |
| 3 | a) | Rough Figure (1 mark) Finding latitudes and departures (4 mark) Calculation steps upto final answer (3 mark) Final answer 745m, N45.32ºW (2 marks)  | (10) |
|  | b) | Consecutive co-ordinates -2.5 marks, independent co-ordinates – 2.5 marks. | (5) |
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| **PART B**  |
| ***Answer any two full questions, each carries 15 marks.*** |
| 4 | a) | Signal Structure (3 marks). Code phase measurements -2.5 marks, Carrier phase measurements – 2.5 marks. | (8) |
|  | b) | Listing GPS errors – 1 mark. Explanation of 3 types- (3×2 =6 marks) | (7) |
| 5 | a) | Explanation of four phases - 4×3 =12 marks | (12) |
|  | b) | Listing any 6 factors (1/2 mark each) | (3) |
| 6 | a) | Any 5 features separating the methods.  | (10) |
|  | b) | Expansion of DGPS (1mark) a short note on DGPS (2marks) advantages of DGPS (2marks) | (5) |
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| **PART C**  |
| ***Answer any two full questions,each carries 20 marks.*** |
| 7 | a) | Listing the types (2 mark) A short note on each of the three types with proper differentiation (3×2= 6 marks) | (8) |
|  | b) | Any 3 salient features of spatial data (3 marks )and attribute data (3 marks) | (6) |
|  | c) | A short note (3 marks) Any example (2 mark) rough sketch (1 mark) | (6) |
| 8 | a) | Explanation to electromagnetic spectrum with sketch – 5 marks. Atmospheric window with sketch – 5 marks. | (10) |
|  | b) | Explanation of four image resolutions – 2.5× 4 = 10 marks. | (10) |
| 9 | a) | Vector data model explanation - ( 4 marks)Advantages ( 3 points – 3 marks)Disadvantages (3 points – 3 marks) | (10) |
|  | b) | Formula and its explanation (3 marks) Application in GIS (2 marks) | (5) |
|  | c) | Difference (2.5 marks) Sketch (2 .5 marks) | (5) |
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