**18CE302**

**Hall Ticket Number:**

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| **II/IV B.Tech (Regular / Supplementary) DEGREE EXAMINATION** | | | |
| **February, 2021** | **Civil Engineering** | | |
| **Third Semester** | **Surveying** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer ALL Questions from PART-A.* | | | (1X10 = 10 Marks) |
| *Answer* ***ANY FOUR*** *questions from PART-B.* | | | (4X10=40 Marks) |
|  | | | **PART-A** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. | a) | Define Base line. | CO1 | |  |
|  | b) | Define Declination. | CO1 | |  |
|  | c) | Define local attraction. | CO1 | |  |
|  | d) | Define latitude and departure. | CO2 | |  |
|  | e) | Define change point. | CO2 | |  |
|  | f) | Define Contouring. | CO2 | |  |
|  | g) | Define satellite station. | CO3 | |  |
|  | h) | Define Apex distance. | CO4 | |  |
|  | i) | Write the relation between degree of curve and radius of the curve. | CO4 | |  |
|  | j) | What is the principle of total station? | CO4 | |  |
| **PART-B** | | | | | |
| 2. | a) | Explain about the sources of errors. | CO1 | 5M | |
|  | b) | Differentiate between prismatic compass and surveyor’s compass. | CO1 | 5M | |
|  |  |  |  |  | |
| 3. |  | Below are the bearings observed in a traverse conducted with a prismatic compass at a place where local attraction was suspected? At what stations do you suspect local attraction? Find the corrected bearings of the lines and also calculate the included angles.     |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Line** | **PQ** | **QR** | **RS** | **ST** | **TP** | | **F.B** | 191º45ʹ | 39º30ʹ | 22º15ʹ | 242º45ʹ | 330º15ʹ | | **B.B** | 13º 00ʹ | 222º30ʹ | 200º30ʹ | 62º45ʹ | 147º45ʹ | | CO1 | 10M | |
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| 4. | a) | Explain about the checks in closed traverse. | CO2 | 5M | |
|  | b) | Find the missing length and bearing of line AB of a theodolite traverse ABCDEA using the following data.   |  |  |  | | --- | --- | --- | | **Line** | **Length (m)** | **Bearing** | | AB | ? | ? | | BC | 50 | 90O | | CD | 75 | 120O | | DE | 25 | 60O | | EA | 40 | 30O | | CO2 | 5M | |
|  |  |  |  |  | |
| 5. |  | The following consecutive readings were taken with a dumpy level  1.895, 1.500, 1.865, 2.570, 2.990, 2.020, 2.410, 2.520, 2.960 and 3.115. The level was shifted after fourth, sixth and ninth readings. The R.L of the first point was 30.500. Rule out a page of your answer book as a level book, and fill all columns. Use height of collimation method and apply the usual checks. | CO2 | 10M | |
| **P.T.O.**  **18CE302** | | | | | |
| 6. | a) | Explain the classification of triangulation. | CO3 | 5M | |
|  | b) | What are the factors to be considered for the site selection of base line? | CO3 | 5M | |
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| 7. |  | The following offsets were taken from a chain line to a hedge   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Distance | 0 | 20 | 40 | 60 | 80 | 120 | 160 | 220 | 280 | | Offset | 9.4 | 10.8 | 13.6 | 11.2 | 9.6 | 8.4 | 7.5 | 6.3 | 4.6 |   Compute the area included between the chain line, the hedge and the offsets by trapezoidal and Simpson’s rule. | CO3 | 10M | |
|  |  |  |  |  | |
| 8. | a) | Explain the elements of simple circular curves with a neat sketch. | CO4 | 5M | |
|  | b) | Write the advantages of total station. | CO4 | 5M | |
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| 9. | a) | Explain the types of EDM instruments. | CO4 | 5M | |
|  | b) | Write the applications of total station. | CO4 | 5M | |

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