**20CE302**

**Hall Ticket Number:**

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| **II/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **March, 2022** | **Civil Engineering** | | |
| **Third Semester** | **SURVEYING** | | |
| **Time:** Three Hours | | **Maximum:7**0 Marks | |
| *Answer Question No.1 compulsorily.* | | | (14X1 = 14 Marks) |
| *Answer ONE question from each unit.* | | | (4X14=56 Marks) |
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|  | a) | | What are different types of chains available | CO1 |  |
|  | b) | | What are the Factors affecting Local Attraction | CO1 |  |
|  | c) | | Define bearing | CO1 |  |
|  | d) | | What is meant by face right | CO2 |  |
|  | e) | | Define latitude and departure | CO2 |  |
|  | f) | | Define a reduced level | CO2 |  |
|  | g) | | State the trapezoidal rule. | CO3 |  |
|  | h) | | What do you mean by triangulation? | CO3 |  |
|  | i) | | Classify signals | CO3 |  |
|  | j) | | State the prismoidal formula for measurement of volume. | CO3 |  |
|  | k) | | Draw a neat sketch of reverse curve | CO4 |  |
|  | l) | | Write the relation between degree of curve and radius of the curve. | CO4 |  |
|  | m) | | Full form of EDM | CO4 |  |
|  | n) | | Principle of Total station | CO4 |  |
| **Unit - I** | | | | | |
| 2. | a) | List out and explain various types of Tape Correction. | | CO1 | 7M |
|  | b) | The length of a Survey line was measured with a 20 m chain and was found to be equal to 1200 m. As a check the length was again measured with a 25 m chain and was found to be 1212 m. On comparing the 20 m chain with the test gauge, it was found to be 10 cm too long. Find the actual length of the 25 m chain used. | | CO1 | 7M |
| **(OR)** | | | | | |
| 3. | a) | The reduced bearings of the lines of a traverse are given  below. Find the whole circle bearings of lines.  Line Bearings  AB N 60o 25' E  BC S 85o 30' E  CD S 25o 45' W  DE S 64o 30' E  EF N 82o 45' W  FA N 28o 14' W | | CO1 | 7M |
|  | b) | Explain the terms   * + - 1. whole circle bearing  1. Quadrantal bearing 2. Meridian and 3. Bearing. | | CO1 | 7M |
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| **Unit - II** | | | | | |
| 4. | a) | Explain the checks in a closed traverse. | | CO2 | 7M |
|  | 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 | 40 | 90O | | CD | 90 | 120O | | DE | 25 | 60O | | EA | 55 | 30O | | | CO2 | 7M |
| **(OR)** | | | | | |
| 5. |  | The following staff readings were observed successively with a level, the instrument having been moved after 3rd, 6th and 8th readings: 2.228, 1.606, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 0.545, 0.825 and 1.500 (m). Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of R.L. 432.384m. | | CO2 | 14M |
| **Unit - III** | | | | | |
| 6. | a) | Derive the expression to compute the area by Simpson’s rule. | | CO3 | 7M |
|  | b) | 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 rule. | | CO3 | 7M |
| **(OR)** | | | | | |
| 7. | a) | What are the factors to be considered for the site selection of base line? | | CO3 | 7M |
|  | b) | Explain briefly about the classification of triangulation | | CO3 | 7M |
| **Unit - IV** | | | | | |
| 8. | a) | Explain the elements of simple circular curves with a neat sketch. | | CO4 | 7M |
|  | b) | Write the applications of total station. | | CO4 | 7M |
| **(OR)** | | | | | |
| 9. | a) | Write the accessories of a total station. | | CO4 | 7M |
|  | b) | Explain the field procedure of a total station. | | CO4 | 7M |

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