**20CE302**

**Hall Ticket Number:**

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| **II/IV B.Tech (Regular\Supplementary) DEGREE EXAMINATION** | | | |
| **January, 2024** | **Civil Engineering** | | |
| **Third Semester** | **Surveying** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | **(4X14=56 Marks)** |
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|  |  |  | CO | BL | M |
| 1 | a) | Define Surveying. | CO1 | L1 | 1M |
|  | b) | What is meant by fore bearing and back bearing? | CO1 | L1 | 1M |
|  | c) | What is meant by local attraction? | CO1 | L1 | 1M |
|  | d) | List out the types of chains. | CO1 | L1 | 1M |
|  | e) | Define turning point. | CO2 | L1 | 1M |
|  | f) | What is meant by closed Traverse? | CO2 | L1 | 1M |
|  | g) | Define latitude and departure. | CO2 | L1 | 1M |
|  | h) | What is meant by back sight? | CO2 | L1 | 1M |
|  | i) | State Simpson’s rule for areas. | CO3 | L1 | 1M |
|  | j) | Write the formula for area of a level section. | CO3 | L1 | 1M |
|  | k) | Define signal. | CO3 | L1 | 1M |
|  | l) | What are the uses of total station? | CO4 | L1 | 1M |
|  | m) | Write the relation between degree of curve and radius of the curve. | CO4 | L1 | 1M |
|  | n) | Write the expression for average ordinate rule. | CO4 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Explain two or three methods. When chaining round the obstacle is possible | CO1 | L3 | 7M |
|  | b) | In passing an obstacle in the form of a pond, station A and D, on the main line, were taken on the opposite sides of the pond. On the left of AD, a line AB, 200m long was laid down and a second line AC, 250m long, was ranged on the right of AD, the points B, D and C being in the same straight line. BD and DC were then chained and found to be 125m and 150m respectively. Find the length of AD. | CO1 | L3 | 7M |
|  |  | **(OR)** |  |  |  |
| 3 |  | A closed compass traverse ABCDE was run and observed bearings of the lines were obtained as under. Correct the bearings for local attraction by interior angles method.   |  |  |  | | --- | --- | --- | | Line | FB | BB | | AB | 72o 45’ | 252o 0’ | | BC | 349o 0’ | 167o 15’ | | CD | 298o 30 | 118o 30’ | | DE | 229o 0’ | 48o 0’ | | EA | 135o 30’ | 319o 0’ | | CO1 | L4 | 14M |
| **Unit-II** | | | | | |
| 4 |  | Fill all the columns. Apply the usual checks. R.L of bench mark is 95.75m   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Station | B.S | I.S | F.S | Rise | Fall | R.L | Remarks | | 1 | 1.195 |  |  |  |  |  | A | | 2 | 0.445 |  | 2.375 |  |  |  |  | | 3 | 2.150 |  | 1.000 |  |  |  |  | | 4 |  | 0.720 |  |  |  |  | B | | 5 | 1.465 |  | 0.260 |  |  |  |  | | 6 | 2.630 |  | 0.905 |  |  |  |  | | 7 | 2.140 |  | 0.975 |  |  |  |  | |  |  |  | 1.305 |  |  | 95.75 | C | | CO2 | L4 | 14M |
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| **(OR)** | | | | | |
| 5 | a) | Write about the checks of a closed traverse. | CO2 | L1 | 7M |
|  | b) | The following lengths and bearing were recorded in running a traverse. Determine the omitted observations, the length and bearing of DA.   |  |  |  | | --- | --- | --- | | Line | Length(m) | W.C.B | | AB | 255 | 14042’ | | BC | 656 | 35000’ | | CD | 120 | 338042’ | | DA | ? | ? | | CO2 | L3 | 7M |
| **Unit-III** | | | | | |
| 6 | a) | Write short notes on Selection of site for Base line. | CO3 | L1 | 7M |
|  | b) | Write a detailed note on classification of signals. | CO3 | L1 | 7M |
| **(OR)** | | | | | |
| 7 | | Determine the area in hectares between the line AB and a meandering stream for offsets taken at regular intervals of 10m along the line AB. Use Trapezoidal rule .   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Distance(m) | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | | Offset length (m) | 13 | 14 | 24 | 20 | 22 | 26 | 10 | 14 | 17 | | CO3 | L3 | 14M |
| **Unit-IV** | | | | | |
| 8 | a) | Explain the types of EDM instruments. | CO4 | L2 | 7M |
|  | b) | Write the applications of total station. | CO4 | L1 | 7M |
| **(OR)** | | | | | |
| 9 | | Explain the elements of a simple circular curve with a neat sketch. | CO4 | L5 | 14M |

