Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18CE2017** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SURVEYING AND GEOMATICS** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (10X1 = 10 MARKS)** | | | |
| 1. | Define Datum. | CO3 | 1 |
| 2. | Define well-conditioned triangle. | CO1 | 1 |
| 3. | List the base inaccessible methods. | CO6 | 1 |
| 4. | Compare Latitude with Departure. | CO3 | 1 |
| 5. | State the main difference between Stadia and Tangential method. | CO2 | 1 |
| 6. | Name the constants involved in tacheometric surveying. | CO3 | 1 |
| 7. | Write the relation between radius and degree of cuve. | CO4 | 1 |
| 8. | Define point of curve. | CO4 | 1 |
| 9. | Define Traingulation. | CO5 | 1 |
| 10. | Define the term heliotropes. | CO5 | 1 |

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| **PART – B (6 X 3 = 18 MARKS)** | | | |
| 11. | Describe the steps involved in temporary adjustment of leveling instruments with neat sketch. | CO6 | 3 |
| 12. | List the 4 general cases of Omitted Measurements. | CO2 | 3 |
| 13. | Describe with a neat sketch, the construction and working of the Subtense bar. | CO1 | 3 |
| 14. | Explain the different types of horizontal curves. | CO4 | 3 |
| 15. | Discuss the term Satellite Station with neat sketch. | CO5 | 3 |
| 16. | List the Errors in Total Station Survey. | CO3 | 3 |

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| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q.no 17 to 23. Q.No 24 is a Compulsory Question)** | | | | |
| 17. | a. | Differentiate between Plane and Geodetic Surveying. | CO1 | 2 |
| b. | The following is an incomplete page of level book in which X indicates missing entry line. Calculate all the missing entries and complete the page of level book. Also give the usual arithmetical check.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | BS | IS | FS | Rise | Fall | RL | Remarks | | 2.56 |  |  |  |  | 100 | BM | |  | 3.54 |  |  | ? | ? |  | |  | 3.20 |  | ? |  | ? |  | |  | 2.34 |  | ? |  | ? |  | | 1.95 |  | ? | 1.08 |  | ? | CP | |  | 2.44 |  |  | X | ? |  | |  |  | 3.46 |  | X | ? |  | | CO3 | 10 |
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| 18. |  | Discuss the Repetition and reiteration method of determining horizontal angles with the help of a theodolite. | CO2 | 12 |
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| 19. |  | The following observations were taken with a tachometer fitted with an anallaticlens, the staff being held vertically. The constant of the tachometer is 100 and 0.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Int.  Station | Height of instrument | Staff station | Vertical angle | Staff readings  (m) | Remark | | P | 1.255 | BM | -4°20’ | 1.325, 1.825,2.325 | RL of BM = 255.750m | | P | 1.255 | A | +6°30’ | 0.850, 1.600, 2.350 | | P | 1.450 | A | -7°24’ | 1.715, 2.315,2.915 |   Calculate the RL of B and the distance between A and B. | CO2 | 12 |
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| 20. |  | A simple circular curve of radius 150m is to be laid between the straights AB and BC at an intersection angle of 132° 50’ the length of the long chord being 120m. Calculate the necessary offsets from long chord at an interval of 15m. Use both exact and approximate formula. | CO4 | 12 |
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| 21. | a. | Explain the steps involved in setting out of building with neat sketch. | CO6 | 7 |
| b. | Demonstrate different classification of triangulation system. | CO5 | 5 |
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| 22. |  | An incomplete traverse table is obtained as follows :   |  |  |  | | --- | --- | --- | | Line | Length (m) | Bearing | | AB | 100.0 | ? | | BC | 80.5 | 140°30’ | | CD | 60.0 | 220°30’ | | DA | ? | 310°15’ |   Calculate the length of DA and bearing of AB. | CO5 | 12 |
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| 23. |  | Develop the expression for horizontal and vertical distances by the tangential mothod for the following cases   1. Both angles are measured in Elevation 2. Both angles are measured in Depression | CO2 | 12 |
|  | **Compulsory:** | | | |
| 24. |  | Explain the concepts of a Total Station survey with its advantages. | CO5 | 12 |