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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May– 2017**

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| **Code :** | **14CE2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SURVEY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. |  | The following consecutive readings were taken with a leveling instrument at intervals of 20m, 2.375,1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630,2.255, and 3.630m.The instrument was shifted after fourth and eighth reading. The last reading was taken on a B.M. of R.L. 110.200m. Find R.L. of all points. | CO3 | 20 |
| (OR) | | | | |
| 2. | a. | Describe the uses of contour and contour map. | CO2 | 5 |
|  | b. | Define Line of collimation and Reduced Level. | CO1 | 5 |
|  | c. | Explain the classification of surveying. | CO2 | 5 |
|  | d. | Explain the properties of contour. | CO3 | 5 |
| 3. | a. | The following records are obtained in a traverse survey, where the length and bearing of the last line were notrecorded:    Compute the length and bearing of the line DA. | CO3 | 20 |
| (OR) | | | | |
| 4. |  | Sighted from two instruments stations A and F,60 m apart, the angles of elevation to station B are 45°30' from station A and 30°20' from station F. the height of the instrument axis at A above the ground is 1.70 m and at F it is 1.60 m. A staff is held on the peg at F and a reading of 2.80 m obtained from the instrument at A with a horizontal line of sight. Find the horizontal distance from A to B and the reduced level of B,that of F being 100.00 above datum. Determine the RL of the top of a tower from the following observations. Also find its distance from B. The distance AB=60 m and stations A and B are in line with the tower. | CO2 | 20 |
| 5. | a. | Explain Theory and principles of Stadia tacheometry. | CO1 | 10 |
|  | b. | In which situation tacheometric surveying can be used. | CO2 | 10 |
| (OR) | | | | |
| 6. |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | To find the RL of station B, two observations are taken by a theodolite from station A-one to a BM and other to the station B, The RL of the BM is given as 510.5m, Find the RL of B and distance between bench mark and station.the records are as follows   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Inst.  Stn | Staff  Stn | Target | Vertical  Angle | Staff  Reading | | A | BM | Lower  Upper | -10o00’  -7o00’ | 0.655  2.655 | | A | B | Lower  Upper | -5o00’  +4o00’ | 1.250  3.200 | | | CO3 | 20 |
| 7. | a. | Define the terms point of curve and point of tangency. | CO3 | 5 |
|  | b. | Explain reverse curve and where do you recommend it. | CO2 | 5 |
|  | c. | What are the different methods of curve setting? | CO3 | 5 |
|  | d. | How a curve is designated? | CO2 | 5 |
| (OR) | | | | |
| 8. |  | A simple Circular curve of radius 150m is to be laid between the straights AB and BC at an intersection angle of 132o 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. | CO2 | 20 |
|  | | **Compulsory**: |  |  |
| 9. | a. | What is triangulation? Explain the classification of triangulation system. | CO3 | 10 |
|  | b. | What do you mean by total station? Write the merits of total station over the odolite. | CO1 | 10 |