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

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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **09CE207/12CE201/CE280** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **SURVEY** | **Max. marks :** | **100** |

|  |  |  |  |  |
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| **Q. No.** | | **Questions** | | **Marks** |
| **PART-A(10X1=10 MARKS)** | | | | |
| 1. | | State any one principle of surveying. | | (1) |
| 2. | | Reason out : differential leveling is adopted \_\_\_\_\_\_\_\_\_\_\_\_ | | (1) |
| 3. | | Define transiting. | | (1) |
| 4. | | The need of Traverse Surveying is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | (1) |
| 5. | | The basic principle of tangential Tachometry is \_\_\_\_\_\_\_\_\_ | | (1) |
| 6. | | Draw stadia diaphragm. | | (1) |
| 7. | | Represent a hill using contours. | | (1) |
| 8. | | Justify: importance of transition curve? | | (1) |
| 9. | | Classify triangulation system. | | (1) |
| 10. | | Is an equilateral triangle a well-conditioned triangle? | | (1) |
| **PART B(5 X 3= 15 MARKS)** | | | | |
| 11. | Compare height of collimation and rise and fall method used for calculation of reduced level | | | (3) |
| 12. | Differentiate between Repetition and Reiteration methods of measuring horizontal angles. | | | (3) |
| 13. | Explain the method to determine the instrument constants of a tacheometer in the field? | | | (3) |
| 14. | Enumerate the functions of transition curve. | | | (3) |
| 15. | List the steps involved in a shore line survey? | | | (3) |
| **PART C(5 X 15= 75 MARKS)** | | | | |
| 16. |  | | 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. | (15) |
| (OR) | | | | |
| 17. |  | | Two points A and B are apart across a wide river. The following Reciprocal levels are taken with one level:     |  |  |  | | --- | --- | --- | | Level at | Readings in meters | | | A | 2.245 | 3.375 | | B | 1.955 | 3.055 |     Calculate the True difference of level between A and B. What is the R.L. of B if that of A is 125.550m? | (15) |
| 18. |  | | What are the different errors in theodolite work? How are they eliminated? | (15) |
| (OR) | | | | |
| 19. |  | | While traversing at Chennai, a closed traverse ABCDE was made, due to the Obstructions it was not possible to observe the bearings of lines BC & CD .Calculate the missed Bearings.     |  |  |  | | --- | --- | --- | | LINE | LENGTH ( M) | RB | | AB | 725 | S 60 ºE | | BC | 1050 | ? | | CD | 1250 | ? | | DA | 950 | S550 30’W | | EA | 575 | S020 45’W | | (15) |
| 20. |  | | The following observations were made using a tachometer fitted with an anallatic lens, multiplying constant being 100, instrument height being 1.550 m   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Instrument Station | Staff Station | WCB | Vertical angle | Stadia hair readings | | O | A | 30O30I | 4O30I | 1.155,1.755,2.355 | | O | B | 75O30I | 10O15I | 1.250,2.000,2.750 |   Calculate the gradient of the line AB also RL’s of A, B. Assume R.L. of instrument axis as 151.550 m. | (15) |
| (OR) | | | | |
| 21. |  | | To measure the elevation of a chimney, double plane method was used. The observations are from the two stations A and B to the chimney P. Determine the elevation of top of chimney   |  |  |  | | --- | --- | --- | | Details | From A | From B | | Angle of elevation to | P=α1 = 200 12’ | P=α2 =210 06’ | | Horizontal angle | BAP =θ1= 620 18’ | ABP θ2= 720 42’ | | Staff reading on BM | 2.240m | 3.260m | | RL of BM = 400m and Distance between A&B is , d=75 m | | | | (15) |
| 22. |  | | A circular curve has 300 m radius and 600 deflection angle. What is its degree by (a) arc definition and (b)chord definition of standard length 30 m. Also calculate (i) length of curve, (ii)tangent length, (iii) length of long chord, (iv)mid-ordinate and (v)apex distance. | (15) |
| (OR) | | | | |
| 23. |  | | a. Explain the characteristics and uses of contours.  b. Write short notes on shore line survey. | (15) |
| 24. |  | | To measure a baseline, a steel tape 20 m long, standardized at 600 F was used with a pull of 180 N. Find the correction per tape length if the temperature at the time of measurement was 85o F and the pull exerted was 250 N.. E is 2.1 x 105 N/ mm2, coefficient of expansion for tape is 0.63 x 10-5 /F0. The cross-sectional area of tape = 5 mm2. | (15) |
| (OR) | | | | |
| 25. |  | | How do you determine the intervisibility of triangulation stations? And overcome the difficulty? | (15) |

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