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

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**End Semester Examination – Apr/May – 2018**

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| **Code :** | **17CE1001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SURVEYING AND LEVELLING** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
|  | **PART-A(20X1=20 MARKS)** |  | |
| 1. | The main principle of surveying is to work. | CO5 | 1 |
| 2. | In chain surveying field work is limited to \_\_\_\_\_\_\_\_\_\_\_. | CO5 | 1 |
| 3. | The process of location of intermediate points on a survey line is: | CO3 | 1 |
| 4. | Survey stations may be marked on the ground using a: | CO3 | 1 |
| 5. | The line of collimation method of reduction of leveling, does not provide check on \_\_\_\_\_\_\_\_\_\_. | CO3 | 1 |
| 6. | In \_\_\_\_\_\_\_\_\_ levelling, the first and last points are at a far distance. | CO2 | 1 |
| 7. | The last reading taken from the instrument is called \_\_\_\_\_\_\_\_\_\_. | CO6 | 1 |
| 8. | Which is the arithmetic check for height of instrument method? | CO5 | 1 |
| 9. | How much error is produced for 20m chain is used, if the length of chain 20mm wrong? | CO1 | 1 |
| 10. | If a 30m chain delivers through a perpendicular distance d from its correct alignment, the error in length is \_\_\_\_\_\_\_\_\_\_. | CO5 | 1 |
| 11. | What is the limit of accuracy obtainable in chain surveying? | CO5 | 1 |
| 12. | Due to the effect of curvature, when the distance are small the error is \_\_\_\_\_\_\_\_\_\_. | CO5 | 1 |
| 13. | An imaginary line joining the points of equal elevation on the surface of the earth, represents \_\_\_\_\_\_\_\_\_\_. | CO5 | 1 |
| 14. | Which method of contouring is most suitable for a hilly terrain? | CO3 | 1 |
| 15. | What is the relation between contour interval and scale of the map? | CO1 | 1 |
| 16. | Closed contours of decreasing values towards their centre, represent­­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_. | CO4 | 1 |
| 17. | True meridians are generally preferred magnetic meridians to because \_\_\_\_\_\_\_\_\_\_\_. | CO4 | 1 |
| 18. | What is the size of the plane table? | CO4 | 1 |
| 19. | The bearing of the line AB is measured from B towards A, it is known as \_\_\_\_\_\_\_\_\_\_\_. |  | 1 |
| 20. | The process of location of intermediate points on a survey line is \_\_\_\_\_\_\_\_\_\_\_. | CO4 | 1 |

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|  | **PART B(10 X 5= 50 MARKS)**  **(Answer any 10 from the following)** |  | |
| 21. | Discuss in brief the principles of surveying. | CO3 | 5 |
| 22. | What are the instruments used in chain surveying? How is a chain survey executed in the field? | CO6 | 5 |
| 23. | Illustrate with neat sketches the construction of a surveying telescope. |  | 5 |
| 24. | Differentiate between ‘Permanent’ and ‘Temporary’ adjustments of level. | CO5 | 5 |
| 25. | Describe profile and block leveling | CO5 | 5 |
| 26. | What are the different sources of errors in leveling? How are they eliminated? | CO5 | 5 |
| 27. | What are the characteristic features of accidental error? | CO1 | 5 |
| 28. | What are uses of contour maps? | CO2 | 5 |
| 29. | Explain the direct method of locating contours. | CO3 | 5 |
| 30. | What are the advantages and disadvantages of plane table surveying? | CO4 | 5 |
| 31. | What is local attraction? How is it detected and eliminated? | CO6 | 5 |
| 32. | Explain the methods for determining width of river by chain surveying. | CO4 | 5 |

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|  | | **PART C(2 X 15= 30 MARKS)**  **(Answer any 2 from the following)** |  | |
| 33. | a. | What are the different types of leveling staff? State the merits and demerits of each? | CO3 | 5 |
| b. | The following consecutive readings were taken with a dumpy level:  6.21, 4.92, 6.12, 8.42, 9.81, 6.63, 7.91, 8.26, 9.71, 10.21  The level was shifted after 4th, 6th and 9th reading. The reduced level at first point was 100m. Indicate the highest and the lowest points. Use collimation system and apply the usual arithmetic check | CO3 | 10 |
| 34. | a. | Derive an expression for correction per chain length to be applied when chaining on a regular slope. | CO4 | 7 |
| b. | Find the sag correction for a 30m steel tape under a pull of 8kg in three equal spans of 10m each. Weight of 1 cubic cm of steel = 7.86gm. Area of cross section of the tape = 0.1 sq.cm. | CO4 | 8 |
| 35. | a. | Describe with the help of sketches the characteristics of contours. | CO6 | 7 |
| b. | Discuss various methods of interpolating the contours. | CO6 | 8 |