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



**End Semester Examination – Nov/Dec - 2017**

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| **Code :** | **16CS1001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMPUTATIONAL THINKING AND PROGRAMMING** | **Max. marks :** | **100** |

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

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Convert (731)8 to Binary. | CO1 | 4 |
| b. | Convert (A5C7)16 to Octal. | CO1 | 3 |
| c. | Convert (864)10 to Hexadecimal. | CO1 | 3 |
| d. | Explain the data encoding techniques. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Explain the different categories of data with examples. | CO1 | 12 |
| b. | Describe run length encoding with an example. | CO1 | 8 |
|  |  |  |  |  |
| 3. | a. | Elaborate problem decomposition with an example and list the advantages. | CO2 | 12 |
|  | b. | Identify the applications of propositional logic and explain any two of them in detail. | CO2 | 8 |
| (OR) | | | | |
| 4. | a. | Write an algorithm to find the simple interest and represent the solution using a flowchart. | CO2 | 8 |
|  | b. | Draw the truth table for the following  i. IF\_THEN ii. IF\_AND\_ONLY\_IF iii. NAND | CO2 | 12 |
|  |  |  |  |  |
| 5. |  | Write an algorithm and program in python to find the roots of the quadratic equation. | CO3 | 20 |
| (OR) | | | | |
| 6. |  | Elucidate the types of iteration statement with suitable example. | CO3 | 20 |
|  |  |  |  |  |
| 7. | a. | What is recursion? Explain with an example program. | CO3 | 10 |
|  | b. | Describe the scope of variables in python with examples. | CO3 | 10 |
| (OR) | | | | |
| 8. |  | Demonstrate the working of a selection sort on the list of values : 8,2,4, 10,5 | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain any five operations in tuple with suitable examples. | CO4 | 20 |

ALL THE BEST