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

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**End Semester Examination – Nov/Dec – 2018**

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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. |  | Convert the following:  i. (77)10=(?)2 ii. (1010)2=(?)10  iii. (108)10=(?)8 iv. (789)10=(?)16  v.(165)8=(?)10 | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Explain any two techniques which can be used to collect the data for developing library management system. | CO1 | 10 |
| b. | Compress the following data using run length encoding.  AAAAAABBBBBBBBBBBBBCCCCCCCABBBBBAAAAAA | CO2 | 5 |
| c. | Describe any two types of data with suitable example. | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Elaborate problem decomposition with an example and list the advantages. | CO2 | 10 |
| b. | List and explain any three functional and non functional requirement of railway reservation system. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Write an algorithm to find the area of rectangle and represent the solution using a flowchart. (A=w\*l) | CO2 | 10 |
| b. | Draw the truth table for the following   1. IF\_THEN ii. AND iii. NAND | CO2 | 10 |
|  |  |  |  |  |
| 5. |  | Elucidate the different types of decision statement with suitable example program. | CO3 | 20 |
| (OR) | | | | |
| 6. |  | Write an algorithm and program in python to test whether the given number is positive, negative or equal to zero. | CO2 | 20 |
|  |  |  |  |  |
| 7. |  | Discuss about the different types of functions in python with suitable example program. | CO3 | 20 |
| (OR) | | | | |
| 8. | a. | Paraphrase about the different searching techniques with suitable example. | CO2 | 10 |
| b. | Summarize the different types of sorting techniques with appropriate example. | CO2 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain any four list operations in python with suitable example. | CO3 | 10 |
| b. | Demonstrate the usage of internet and multimedia. | CO4 | 10 |