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



**End Semester Examination – Nov / Dec – 2019**

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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 (65)10=(?)2 ii. (101010)2=(?)10  iii. (105)10=(?)8 iv. (625)10=(?)16  v. (152)8=(?)10 | CO1 | 20 |
| **(OR)** | | | | |
| 2. | a. | Elaborate the different categories of data with examples. | CO1 | 12 |
| b. | Describe run length encoding with an example. | CO1 | 8 |
|  |  |  |  |  |
| 3. | a. | Explain the elements of computational thinking. | CO1 | 14 |
| b. | List and explain any three functional and non functional requirement of a media player. | CO2 | 6 |
| **(OR)** | | | | |
| 4. | a. | Write an algorithm to find the area of a circle and represent the solution using a flowchart. | CO2 | 8 |
| b. | Draw the truth table for the following  i) AND ii) IF\_AND\_ONLY\_IF iii) OR | CO2 | 12 |
|  |  |  |  |  |
| 5. |  | Write an algorithm and program in python to find the greatest of three numbers. | CO3 | 20 |
| **(OR)** | | | | |
| 6. |  | Describe the various types of looping statements with suitable example programs. | CO3 | 20 |
|  |  |  |  |  |
| 7. |  | Develop an algorithm and code using python to find the nCr values using functions. | CO3 | 20 |
| **(OR)** | | | | |
| 8. |  | Demonstrate the working of various sorting algorithms. | CO3 | 20 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain about various tuple and list operations in python with suitable example. | CO3 | 10 |
| b. | Outline the security and privacy features used in Internet. | CO4 | 10 |