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



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

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| **Code :** | **16CS2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ESSENTIALS OF 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. | Discuss the basic organization of a computer system, and explain the functions of various units of computer system. | CO1 | 10 |
| b. | Describe the various computer generations along with the key characteristics of the computer of each generation. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | Compute the following conversions:   * (167)8 to decimal * (1101.001)2 to decimal * (9823)10 to binary | CO1 | 10 |
| b. | List the various services provided by the Internet. | CO1 | 10 |
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| 3. | a. | Illustrate the application of logical operators with appropriate examples. | CO2 | 10 |
| b. | Write a program to reverse the given input and determine whether the original and reversed numbers are equal or not. | CO3 | 10 |
| **(OR)** | | | | |
| 4. | a. | Demonstrate the purpose of break and continue statements using sample programs. | CO2 | 10 |
| b. | Write a program to print all Armstrong numbers between 1 and 500. If sum of cubes of each digit of the number is equal to the number itself, then the number is called an Armstrong number. For example, 153 = (1\*1\*1) + (5\*5\*5) + (3\*3\*3). | CO3 | 10 |
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| 5. | a. | Write a menu driven program which has the following options:   1. Addition of two numbers 2. Finding Maximum of two numbers 3. Finding Minimum of two numbers 4. Odd or Even   Once a menu item is selected, appropriate action should be taken. | CO3 | 10 |
| b. | Enumerate the concept of static and external storage classes. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | What is known as recursive function? Write a recursive function to find the factorial of a given number n. | CO2 | 10 |
| b. | Write a function that receives an integer n and print the prime numbers till n. | CO3 | 10 |
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| 7. | a. | Write a sorting program to arrange an array of n numbers in ascending order. | CO3 | 10 |
| b. | Explain the concept of pointers and array of pointers with suitable examples. | CO2 | 10 |
| **(OR)** | | | | |
| 8. | a. | Describe the application of enumerated data types. | CO2 | 10 |
| b. | Write a program which demonstrates the standard library string handling functions, strcpy(), strcat(), strcpy() and strlen(). | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Write a function that compares two given dates. To store a date, create a structure that contains three members namely day, month and year. If the dates are equal, the function should return 0, otherwise it should return 1. | CO3 | 10 |
| b. | Describe opening a file, reading from a file and closing the file with an example program. | CO2 | 10 |