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



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

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| **Code :** | **14CS2068** | **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. | Explain the steps involved in solving problem using Top down strategy. | CO1 | 10 |
| b. | Design an algorithm to check whether an entered number is odd / even and to calculate sum of three numbers. | CO2 | 10 |
| **(OR)** | | | | |
| 2. | a. | What is an operator? Explain the different types of operators in C language with examples. | CO3 | 10 |
| b. | Develop a C program to solve a quadratic equation. | CO2 | 10 |
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| 3. | a. | Construct a C program to print the multiplication table of the number entered by the user. Draw the flow chart for the process. | CO2 | 10 |
| b. | Explain about the floating point and integer data type in C with examples. | CO2 | 10 |
| **(OR)** | | | | |
| 4. | a. | Admission to a professional course in subject to the following conditions  i) Marks in Maths> =60  ii) Marks in Physics >=50  iii) Marks in chemistry >=40  iv) Total in all the three subjects >=200 (or) Total in Maths and Physics >=150  Given the marks of three subjects, write a program to process the applications to list the eligible candidates using switch statement. | CO2 | 15 |
| b. | Compare and contrast the various data types in C. | CO2 | 5 |
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| 5. | a. | Develop a C program to swap two numbers using call by value and call by reference. | CO2 | 10 |
| b. | Compile a C program to perform matrix addition and matrix subtraction using two dimensional array. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Create a C language program to enter n elements in array and find second smallest number from an array. | CO2 | 10 |
| b. | Construct a C program to sort the inputs in ascending and descending order using two dimensional array. | CO2 | 10 |
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| 7. | a. | Outline a C program to maintain a record of “n” employee details using an array of structures with four fields (employee id, name, basic pay, hra, da, gross pay, and designation). Each field is of an appropriate data type. Print the salary slip of the employee given employee name as the input. | CO2 | 10 |
| b. | Appraise a C program to demonstrate the various string operations in C. | CO2 | 10 |
| **(OR)** | | | | |
| 8. | a. | Explain about the various storage classes in C with examples. | CO2 | 10 |
| b. | Define a structure Student that consists of the following members:  Reg-no, name, marks in 3 subjects  i) Print maximum mark in each subject along with name of the  student.  ii) Calculate total and average and print Rank wise list. | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Create a C program to open a file and count the number of characters in the file. | CO2 | 10 |
| b. | Discuss the various steps involved in software development process. | CO3 | 10 |