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



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

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| **Code :** | **18CS1004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PROGRAMMING FOR PROBLEM SOLVING** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (10 X 1 = 10 MARKS)** | | | |
| 1. | Define algorithm. | CO1 | 1 |
| 2. | Identify the invalid variable(s) in the following declations.  (a) int number; (b) float for; (c) invariable\_count; (d) int $main; | CO1 | 1 |
| 3. | Predict the output of the following program.  #include<stdio.h>  void main(){  int x, y=5, z=5;  x=y=z;  printf("%d", x);  } | CO1 | 1 |
| 4. | Differentiate between = and == operator. | CO1 | 1 |
| 5. | Show how the execution for do while loop is terminated. | CO3 | 1 |
| 6. | The data type of the controlling statement of a switch statement cannot be of the type\_\_\_\_\_\_\_\_   1. int (b) char (c) short (d) float | CO2 | 1 |
| 7. | Predict the error / output in the following program:  #include<stdio.h>  void main(){  int a[3][3]={1,2,3,4,5};  printf(“%d\n%d”,a[1][1], a[2][2]);  } | CO5 | 1 |
| 8. | Predict the error / output in the following program:  #include<stdio.h>  #include<string.h>  void main(){  char str1[]="abc", str2[]="def";  printf("%d", strcmp(str1,str2));  } | CO5 | 1 |
| 9. | Predict the error (if any)/output in the following program.  #include<stdio.h>  void main( ){  int x;  x=m( );  printf("%d", x); }  void m( ){  printf("hello"); } | CO4 | 1 |
| 10. | Give the output of following code.  #include<stdio.h>  void main( ){  display(10);  printf("%d",display(10 ));}  int display(int x)  { printf("%d\n",x);  return ++x; } | CO4 | 1 |

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| **PART – B (6 X 3 = 18 MARKS)** | | | |
| 11. | Draw the block diagram of computer and describe its components. | CO1 | 3 |
| 12. | Write a C program to calculate square of a number using arithmetic operator. | CO6 | 3 |
| 13. | Write a C program to display the consecutive digits 0, 1, 2, …. 9, with one digit on each line using while loop. | CO3 | 3 |
| 14. | Write a C program to copy the contents of one character array to another, without using the pre-defined library function strcpy(). | CO5 | 3 |
| 15. | Write a C program to find factorial of given number using recursion. | CO4 | 3 |
| 16. | Illustrate dynamic memory allocation with suitable example. | CO2 | 3 |

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| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q.no 17 to 23. Q.No 24 is a Compulsory Question)** | | | | | |
| 17. | a. | Discuss the structure of a C program. | | CO1 | 6 |
| b. | Write a C program to calculate area of the parallelogram.  Example:  base: 10  vertical\_Height: 15  area= base \* vertical\_Height=150 | | CO2 | 6 |
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| 18. | a. | Develop a C program to display the memory allocated for primitive datatypes. | | CO2 | 6 |
| b. | Write a C program to find the smallest and largest of the given three numbers. | | CO6 | 6 |
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| 19. | a. | Write a C program to calculate the sum of first n odd integers (i.e., ) using looping statement. | | CO3 | 6 |
| b. | Write a C program to determine the roots of a quadratic equation using the well-known quadratic formula. | | CO6 | 6 |
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| 20. | a. | Write a C program to search a substring within a given string. | | CO5 | 6 |
| b. | Write a C program to find the sum and average of the elements in an array. Read the number of elements and the individual elements in the array from the user. | | CO5 | 6 |
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| 21. | a. | Write a C program to find fibonacci of given number using function. | | CO4 | 6 |
| b. | Differentiate between call by value and call by reference using suitable example. | | CO5 | 6 |
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| 22. | a. | Explain the relational and logical operators in C with relavent examples. | | CO1 | 6 |
| b. | Discuss pointers and operations on pointers with examples. | | CO5 | 6 |
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| 23. | a. | Explain the various branching control statements in C with example. | | CO3 | 6 |
| b. | Demonstrate the various string handling functions. | | CO4 | 6 |
|  |  | **Compulsory:** | | | |
| 24. | a. | Discuss Structures. Create a structure variable for the structure Student, and initialize its members with the following values.  Name : Tijo  Register Number : 156  Address : KITS, Karunya Nagar. | CO5 | | 8 |
| b. | Compare and contrast Structures with Arrays. | CO5 | | 4 |