**NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA**

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| **THEORY EXAMINATION** | | **ROLL NO.\_\_\_\_\_\_\_\_\_\_\_\_** |
| Date of the Examination:**30-03-2022** | Programme: **….B.Tech………** | |
| **Semester…1st** ....**………….** | **Subject: Basics of Programming** | |
| **Course No……CSIR-11………………** | **Maximum Marks…50………** | |
| Number of Questions to be attempted...**06…** | Time allowed ...**2 Hours………** | |
| **Total No. of Questions………06……………….** | **Total No. of Pages used…2…**. | |

**Instructions:** 1. All questions are compulsory.

2. Marks for every part of question are indicated against it.

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| Q1. | (A) What do you mean by CPU? Explain different component of CPU with the help of suitable diagram.  (B)Explain the significance of the break statement in the switch-case construct. What would result in its absence? | 5  3 |
| Q2. | (A)WAP in C that takes a statement through user in a string and find that word “the" occur how many times in that statement.  (B)What are the benefits of using structure? Write a program in C to store data(Name, address, age, marks) of students and print the names of those students those having marks greater than average marks of the class and their name starts with ‘A’. | 5  5 |
| Q3. | (A) Explains difference between while and do-while loop with an example.  (B)Check weather a string is palindrome or not (input by the user).  (C)Calculate LCM of four numbers input by the user. | 2  2  3 |
| Q4. | (A)WAP in C that find largest number in an integer array of 10 elements using a user defined function named findMax.  (B)What is the advantage and limitations of using recursion? Write a c program to find nth largest and smallest element of the array where n is input by the user. | 2  6 |
| Q5. | (A)Write a program in C to remove duplicate elements from the array and store those elements in separate array and rename this array as “Array1”. And merge this “Array1” elements into “Array2”. Where each elements of “Array2” is twice the elements of array1.  (B)Write a program to print following pattern:  123454321  1234 4321  123 321  12 21  1 1 | 4  5 |
| Q6. | (A)A class has a number of students and a number of candies to pass out to them. Their teacher decide the fairest way to divide the candies is to seat the students around a circular table in sequentially numbered chairs. A chair number will be drawn from a hat. Beginning with the student in that chair, one candy will be handed to each student sequentially around the table until all have been distributed.  The teacher is playing a little joke, though. The last piece of candy looks like all the others, but it tastes awful. Determine the chair number occupied by the student who will receive that candy.  Example  n=4  m=6  s=2  There are 4 students, 6 pieces of candy and distribution starts at chair 2. The students arrange themselves in seats numbered 1 to 4. Students receive candy at positions 2, 3, 4, 1, 2, 3. The student to be warned sits in chair number 3.  WAP to take input n, m, s and return output the seat number to be warned. | 8 |