

Co

NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA

Theory Examination: Nov/Dec'2017

Semester: 1st

Roll No:

Subject: Basics of Programming (CSIR-11)

Duration: 3 hours

MM: 50

NOTE: 1. The question paper contains **eight** questions.2. The total number of questions to be answered is **five**.3. **All questions are of equal marks.**

4. Attempt all parts of a question at one place.

Question 1:**[5*2=10 marks]**

- Analyze the different components of a computer system with the help of block diagram. Give the difference between software and hardware with examples.
- What do you understand by operating system? What are its functions? Give name of three operating systems.

Question 2:**[5*2=10 marks]**

- What are the different operators available in C? Explain with examples.
- Write a program in C to read an integer number from keyboard, add 1 to it if the number read is even, again add 1 to it if the number is less than 20, otherwise keep the number unchanged and give the final result.

Question 3:**[5*2=10 marks]**

- Differentiate nested-if-construct from switch-case-construct with the help of example.
- Write a program to print the following pattern:

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*
**
***
****
*****

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Question 4:**[5*2=10 marks]**

- Write a C program to find the factorial of an inputted number.
- Write a C program to find the largest number among three numbers.

Question 5:**[5*2=10 marks]**

- What do you understand by function, function declaration and function definition? Explain the categories of functions in detail with an example of each.
- What is the difference between call by value and call by reference (pointer).

Question 6:**[5*2=10 marks]**

- What are the advantages and disadvantages of arrays? Write a function in C to find sum and average of the list (array) of elements.

ii). Write a program in C to store and print multiplication of two matrix.

Question 7:

[5*2=10 marks]

- i). What is the difference between structure and array? Write a Program to create structure **SYSTEM**, store and print a record of desktop system. The fields are: **system_id, company_name, system_cost, operating_system, year_of_manufacturing.**
- ii). Analyze memory representation of string with '\0' character. Write a program to:
 - find length of string
 - Reverse and check string is palindrome or not.

Question 8: Attempt any five.

[2*5=10 marks]

- i). Compare Compiler, Assembler and Interpreter?
- ii). What are the different primary data types available in 'C'?
- iii). Differentiate between *while* loop and *do...while* loop?
- iv). Write a C program to swap values of two variables without using a third variable.
- v). Differentiate between pre-increment and post-increment operators?
- vi). Give difference between '=' and '==' operator?
- vii). What will happen when you access the array more than its dimension?
- viii). Write a function in C to count number of characters in a string.