PAPER ID-411615

Roll No:

BTECH
(SEM I) THEORY EXAMINATION 2021-22
COMPUTER SYSTEM & PROGRAMMING IN C

Time: 3 Hours   *Total Marks: 70*

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 7 = 14**

a.	Make a hierarchy of different memories available in computer.
b.	Differentiate between Compiler and Interpreter.
c.	Write the difference between Logical error and Syntax error.

d.	What is the output of the following code?
	 int a = 6;
	 b = ++a + a++ - a;
	 printf("a=%d, b=%d",a,b);

e.	What is the difference between & and && operators?
f.	Differentiate between Formal arguments and actual arguments.
g.	Define Enumerated data type.

SECTION B

2.   **Attempt any *three* of the following:**   **7 x 3 = 21**

a.	Draw a neat and clean block diagram of a computer. Explain the functioning of each component with suitable example.
b.	Compare different Storage Classes of C language in terms of storage, default initial value, scope, and life with suitable example of each.
c.	Write a program in C to check whether the sum of individual digits of a number is even or odd.
d.	Define recursion. Write a program to find the factorial of a number using recursive function.
e.	Differentiate among malloc(), calloc() and realloc() functions with example.

SECTION C

3.   **Attempt any *one* part of the following:**   **7x1=7**

(a)	Design an algorithm to find the largest of three numbers and convert into a flowchart.
(b)	Design an algorithm to find the roots of quadratic equation and convert into a flowchart.

4.   **Attempt any *one* part of the following:**   **7x1=7**

(a)	Differentiate between precedence of operators and associativity of operators with suitable example
(b)	Differentiate between type conversion and type casting. Write a program in C to input a floating-point number and find rightmost digit of this number.

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5. Attempt any *one* part of the following: 7x1=7

(a)	Define looping and write a program in C to print the following pattern 5 4 3 2 1 5 4 3 2 5 4 3 5 4 5
(b)	Differentiate between while and do while and write a program to check whether a number is prime or not.

6. Attempt any *one* part of the following: 7x1=7

(a)	Define sorting and write a program to sort given numbers in ascending order.
(b)	Define linear searching and write a program to search maximum and minimum from the list of numbers.

7. Attempt any *one* part of the following: 7x1=7

(a)	What is pointer? Write difference between call by value and call by reference with example.
(b)	Define the following functions: fopen(), fclose(), getc(), putc(), fscanf(), ftell( ), fseek( )