BTECH
(SEM II) THEORY EXAMINATION 2021-22
PROGRAMMING FOR PROBLEM SOLVING

Time: 3 Hours

Note: Attempt all Sections. If you require any missing data, then choose suitably.

Total Marks: 100

SECTION A

1. Attempt *all* questions in brief.

2x10 = 20

Qno	Questions	CO
(a)	Differentiate between void and int datatypes.	1
(b)	Draw the Pyramid structure of memory hierarchy.	1
(c)	Describe the syntax and working of Ternary operator.	2
(d)	Write advantages of Switch statement.	2
(e)	Find the output: ```#include <stdio.h>\nint main()\n{\n int a=100;\n printf("%d\n"+1, a);\n printf("Value is = %d"+3, a);\n return 0;\n}```	3
(f)	Define function and its type.	3
(g)	Find the output: ```#include<stdio.h>\nint main()\n{\n int arr[1]={10};\n printf("%d\n", 0[arr]);\n return 0;\n}```	4
(h)	Define time and space complexity. What is the complexity of bubble sort?	4
(i)	Find the output: ```#include<stdio.h>\nint main()\n{\n printf("%d", sizeof(void *));\n return 0;\n}```	5
(j)	What is the requirement of FREE() function in Dynamic memory allocation.	5

SECTION B

2. Attempt any *three* of the following:

10x3 = 30

Qno	Questions	CO
(a)	Discuss the various symbols used in flow chart and Draw the flow chart to find the reverse of a number.	1
(b)	Illustrate the concept of type conversion and type casting with program.	2
(c)	Write a program to print the pattern 1 12 123 1234 123 12 1	3

(d)	Explain bubble sort concept and write the program.	4
(e)	Discuss about the command line argument with example.	5

SECTION C

3. **Attempt any *one* part of the following:** 10x1 = 10

Qno	Questions	CO
(a)	Explain the different kind of storage classes in C programming.	1
(b)	Draw the architecture of Digital computer System and explain its all components.	1

4. **Attempt any *one* part of the following:** 10x1 = 10

Qno	Questions	CO
(a)	Define Operator and Operands. Discuss about the different type of operators used in programming.	2
(b)	What is use of break in switch case? Write a program to develop a calculator using case in character format.	2

5. **Attempt any *one* part of the following:** 10x1 = 10

Qno	Questions	CO

(a)	Write a Program for pattern
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(b)	Write a program to print the Fibonacci series using recursive function. Take the limit from the user as input.	3

6. **Attempt any *one* part of the following:** 10x1 = 10

Qno	Questions	CO
(a)	Write a program for the selection sort and explain it with example.	4
(b)	Write a program to find the product of two 2-dimensional array and print the output in separate array.	4

7. **Attempt any *one* part of the following:** 10x1 = 10

Qno	Questions	CO
(a)	Write a program to allocate the memory with dynamic memory allocation concept. Take the input from the user and find the sum of all elements.	5
(b)	Discuss about the file handling concept and write a program to copy the content of one file to another and print the count of these coping elements.	5