PAPER ID-411592

Subject Code: KCS101T

Roll No: | | | | | | | | | | | | | |

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

Time: 3 Hours ***Total Marks: 100***

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

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

Qno.	Question	Marks	CO
a.	Differentiate between algorithm and pseudocode.	2	1
b.	What are header files? Why are they important?	2	1

c.	Find the output of the following code:
	void main()
	{
	int x=3 , y = 4 , a=6 , z=7,result ;
	result = (x>y) + ++a || !c ;
	printf("%d", result);
	}
		2	2

d.	Write limitations of switch case.	2	2
e.	Show the usage of break statement.	2	3
f.	Differentiate between scope and lifetime of variable.	2	3
g.	Write limitations of subscript operator in an array.	2	4
h.	Compare linear and binary search in terms of complexity.	2	4

i.	Find the output of the following code:
	void main()
	{
	int a ,*p;
	//value of a is input by the user and assumed it is equal to 7.
	p = &a;
	scanf("%d", p);
	printf("%d",a);
	}
		2	5

j.	Explain the significance of End of File (EOF).	2	5

SECTION B

2. Attempt any *three* of the following: 3x10=30

Qno.	Question	Marks	CO
a.	Draw block diagram of computer and explain each of its components in brief.	10	1
b.	Differentiate between type conversion and typecasting. Write a program to input a floating-point number and find leftmost digit of integral part of a number.	10	2
c.	Write a program to find the sum of series using function 1! + 2! + 3! + 4! +---------- n terms.	10	3
d.	Write a program to find transpose of matrix.	10	4
e.	Why are preprocessor required? Explain any two preprocessor directives	10	5

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SECTION C

3. Attempt any *one* part of the following: 1x10=10

Qno.	Question	Marks	CO
a.	Define flowchart and draw a flowchart to find largest among three numbers.	10	1
b.	Explain in detail about all storage classes with proper example.	10	1

4. Attempt any *one* part of the following: 1x10=10

Qno.	Question	Marks	CO
a.	Explain Logical, Unary and Bitwise operators in detail.	10	2
b.	Compare if-else-if ladder and switch case. Write a menu driven program to perform basic functions of calculator.	10	2

5. Attempt any *one* part of the following: 1x10=10

Qno.	Question	Marks	CO
a.	Define recursion. Write a program to find sum of Fibonacci series using recursion.	10	3
b.	Differentiate between call by value and call by reference with proper example.	10	3

6. Attempt any *one* part of the following: 1x10=10

Qno.	Question	Marks	CO
a.	Implement sorting technique using bubble sort on the following sequence: 34,78 ,12, 5 ,3, 98, 101, 15	10	4
b.	What is searching? Write a program to implement linear search.	10	4

7. Attempt any *one* part of the following: 1x10=10

Qno.	Question	Marks	CO
a.	Define dynamic memory allocation. Differentiate between malloc () and calloc () with proper example.	10	5
b.	Explain different file opening modes. Write a program to read content of any file and display the number of lines and words in that file.	10	5