

				S	ubje	ect (Code	: K	CS1	01T	1
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.

 $2 \times 10 = 20$

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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:	2	2
	void main()		
	{		
	int $x=3$, $y=4$, $a=6$, $z=7$, result;		
	result = $(x>y) + ++a \parallel !c$;		
	printf("%d", result);		
	}	_	_
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:	2	5
	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);		
•	Frontain the significance of Eq. 1 of Eile (EQE)	2	_
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	10	1
	brief.		
b.	Differentiate between type conversion and typecasting. Write a program	10	2
	to input a floating-point number and find leftmost digit of integral part of		
	a number.		
c.	Write a program to find the sum of series using function	10	3
	1! + 2! + 3! + 4! + n terms.		
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

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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	СО
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	10	2
	to perform basic functions of calculator.		

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	10	3
	recursion.	Ω	
b.	Differentiate between call by value and call by reference with proper	10	3
	example.	5	

6. Attempt any *one* part of the following:

$1 \times 10 = 10$

Qno.	Question	Marks	СО
a.	Implement sorting technique using bubble sort on the following	10	4
	sequence:		
	34,78 ,12, 5 ,3, 98, 101, 15		
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	10	5
	calloc () with proper example.		
b.	Explain different file opening modes. Write a program to read content of	10	5
	any file and display the number of lines and words in that file.		