PAPER ID-411324

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

BTECH
(SEM II) THEORY EXAMINATION 2023-24
PROGRAMMING FOR PROBLEM SOLVING

TIME: 3 HRS   **M.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**

Q no.	Question	Marks	CO
a.	1Nibble =………..Bytes.	2	1

b.	Find the value of variable max in the following code: -
	int a=10, b=20;
	int max= (a>b)? a: b;
		2	2

c.	Define Explicit type conversion with suitable example.	2	2
d.	Write a C program to print all natural numbers from 10 to 100.	2	3
e.	Define Pointer to Pointer.	2	4

f.	Find the output of following code: -
	#include<stdio.h>
	#defien a 2*2+2
	void main ()
	{
	int b,c;
	b=2/a;
	c=b+4;
	printf("Value of variable b and c are %d%d respectively ", b,c);
	}
		2	5

g.	Draw block diagram to represent doubly linked list.	2	5

SECTION B

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

a.	What is Flowchart what are the properties of Flowchart? Draw a flowchart to check number is a buzz number or not. (A number is said to be Buzz if it ends with 7 or divisible by 7).	7	1
b.	What is the importance of Precedence order and associativity? Explain Bitwise and Ternary operators in detail.	7	2
c.	Write a program in C language to multiply 2 matrices of order n*n each and print the resultant matrix along with the transpose of the resultant matrix.	7	3
d.	Write a program in C language to implement Selection sort method.	7	4
e.	Write a program to delete the end of the file using function feof(). Display the file pointer position for detecting end of file.	7	5

SECTION C

3.   Attempt any *one* part of the following: **7 x 1 = 7**

a.	What is the different user defined data types in C language? Write range, Format specifier, memory size of primitive data types.	7	1
b.	How algorithm is different form flowchart. Write an algorithm to check number is a Prime number or not.	7	1

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4. **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	Why break statement is required? Write a C program in C language to check character is a vowel or consonant.	7	2
b.	Write a program in C language to calculate energy bill. Read the starting and ending meter readings. The charges are as follows: -	7	2

No. of Units	Consumed rates in Rs.
0<units<=200	Rs 5.50 per Unit
200<units<=400	Rs 700 + Rs 6.0 per unit excess of 200
400<units<= 600	Rs 1400 + Rs 7.50 per unit excess of 400
600<units	Rs 1850+ Rs 9.0 per Unit excess of 600

5. **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	(i) Write a program in C language to print the following pattern: - 1 4 9 16 25 36 49 64 81 100 (ii) Write a program in C language to print the sum of following series: S=1!/n! + 2!/n! + 3!/n!..........x!/n!.	7	3
b.	Write a program in C language using union to store name, mobile number, year of birth, fees deposited, total marks in class 12th and print only name and marks of class 12th of those students who have deposited fees less that5000 and how born after year 2005.	7	3

6. **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	Write a C program to find the presence of any particular element in an array of n number of elements using Binary search method.	7	4
b.	What are the different types of functions in C programming? Write a C program to print the multiplication of all the digits of a number using recursion.	7	4

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

a.	What are the advantages of Dynamic memory allocation over static memory allocation? Write a program to display two numbers with malloc () and reallocate memory for displaying three numbers.	7	5
b.	Define any 3 functions which are used for file handling in C language. Write a program in C language to count total number vowels in a text file.	7	5