MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE	Sub. Name : Principles of Programming using C(BPOPS103)
Dept. of Computer Science and Engineering	Schedule: 09/01/2024 11.30am to12.15 pm
Third Internal Assessment 1ST Sem.	Total Marks: 30

Instructions to students

Q#		Question Description	M	BTL	COs
		Part-A			
1	a	Write a C program to search an element using Binary search technique.	8	2	3
	b	Explain the syntax of function declaration, function definition and function call with example.	7	2	3
		OR			
2	a	Define recursive function. Write a program to find the factorial of a number using recursive function.	8	2	3
	b	Describe different types of storage classes with example.	7	2	3
		Part-B			
3	a	Define string. Explain any 4 string handling functions.	8	2	3
	b	Explain Accessibility and visibility of the variable at different point in the program with example.	7	2	3
		OR			
4	a	Implement matrix multiplication and validate the rules of multiplication.	8	2	3
	b	Explain two methods of passing parameters to functions with example.	7	2	3

	MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE Dept. of Computer Science and Engineering 1ˢᵗ Internal Assessment 1st Sem.	Sub. Name : Principles of programming using C(Sub Code:BPOPS103) Schedule: 10/11/2023 9:30AM to 10:45AM Total Marks: 30

Q.NO		Question Description	M	BTL	COs
Part-A					
1	a	Illustrate the different data types available in C with examples.	7	L2	CO1
	b	Develop an algorithm, flowchart and C Program to represent a point in x-y coordinates to r - Θ co-ordinates $(r = \sqrt{x^2 + y^3}$, $\Theta = \tan^{-1}\frac{y}{x})$	8	L3	CO2
OR					
2	a	Explain with syntax, input and output functions with respect to keyboard as input device and monitor as output device.	7	L2	CO1
	b	Develop an algorithm, flowchart and C program to find the area and perimeter of a circle.	8	L3	CO2
Part-B					
3	a	Explain the Implicit and Explicit type conversion and Develop a C program to convert a floating-point number into the corresponding integer number using type casting	7	L2	CO2
	b	Identify the data assigned to x, y, a, b from the following program segment : int x, y; float a, b; x = 1650 / 100 + 3.8; y = 1650 / 100.0 + 3.8; a = 1650 / 100 + 3.8; b = 1650 / 100.0 + 3.8;	8	L3	CO2
OR					
4	a	Explain the Logical, Arithmetic and Relational operators along with precedence and associativity.	7	L2	CO2
	b	Identify the equivalent C expressions for the following a. $\dfrac{a + b}{c + \frac{d}{ef}}$ b. $\sqrt[n]{|x + e^x|}$ c. $\dfrac{\sin 30° + \alpha\beta}{\rho_0 - \rho_1}$ d. $0 \leq n \leq 1$	8	L3	CO2

	MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE	**Sub. Name: Principles of Programming using C**
	Dept. of Computer Science and Engineering	**(Sub Code: BPOPS103)**
	2nd Internal Assessment 1st	Schedule: 08/12/2023 and 9:30am to 10:45am
	Semester.	Total Marks: 30

Instructions to students

Q.No		Question Description	M	BTL	COs
		Part-A			
1	a	Explain for loop in C. Justify with its Syntax and example.	7	L2	CO2
	b	Write a C program to find the factorial of a number.	8	L3	CO2
		OR			
2	a	List the conditional branching statements in C. Explain any two with example.	7	L2	CO2
	b	An electricity board charges the following rates for the use of electricity: For the first 200units 80paise per unit: For the next 100 units 90paise per unit Beyond 300 units Rs.1 per unit. All users are charged a minimum of Rs.100 as meter charge. If the total amount is more than Rs.400, then an additional surcharge of 15% of total amount is charged. Write a program to read the name of the user, number of units consumed and print out the charges.	8	L3	CO2
		Part-B			
3	a	List and explain Unconditional branching statements with example.	7	L2	CO2
	b	Implement a C program to simulate a simple calculator that performs Arithmetical Operations using Switch statement.	8	L3	CO2
		OR			
4	a	Find the output of the following program segments.	7	L3	CO2
	b	Write a C program to print the prime numbers using for loop	8	L3	CO2

Find the output of the following program segments.

```
(i)     int x,y;
        x=6;
        y=x++;
        printf ("x =%d y=%d\n", x,y);
(ii)    int x,y;
        x=6;
        y = ++x;
        printf("x =%d y =%d\n", x,y);
(iii)   int x=10;
        if ( x++ >10)
        printf("Hello\n");
        else
        printf("Bye\n");
(iv).   int x=10;
        if (++x >10)
        printf("Hello\n");
        else
        printf("Bye\n");
(v)     int x,y;
        x=8,
        y=5,
        x> y? printf ("x=%d\n", x++);
        printf ("x=%d\n", ++x);
(vi)    int i;
        for (i=1;i<=10;i++)
        printf("%d\n", ++i );
(vii)   int x,y,
        x=5;
        y=7;
        x<y? printf("x =%d\n", x++);
        printf("x =%d\n", ++x);
```