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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Semester End Main Examinations

Program: B.E. **Semester: I / II**
Branch: Common to all Branches **Duration: 3 hrs.**
Course Code: 22CS1ESPOP / 22CS2ESPOP **Max Marks: 100**
Course: Principles of Programming using C

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.
3. Write output for every code.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	*CO*	*PO*	Marks
1	a)	Using ternary operator, write a program to find the largest of three numbers.	CO2	PO1,2, 3	**04**
	b)	Given a=15 and b= -20 perform bitwise and, bitwise or and bitwise xor operations and show the calculated result.	CO1	PO 1,2	**06**
	c)	I. Which of the below identifiers are invalid. Justify i. Student_name ii. 23_student iii. $Sum iv. char	CO1	PO 1,2	**04**

	d)	Predict the output of the following code and justify:
		i.
		#include<stdio.h>
		int main()
		{
		int x, y;
		x = 5;
		y = x++ / 2;
		printf("%d", y);
		return 0;
		}
		ii.
		#include<stdio.h>
		int main()
		{
		int i = 2;
		int j = ++i + i--;
		printf("%d\n", j);
		}
		iii.
		#include <stdio.h>
		int main()
		{
		printf("%d",(9-12/(3+3)*(2-1)));
		return 0;
		}
			CO1	PO 1,2	**06**

			UNIT - II			
	2	a)	Write a C program to compute the sum of first n natural numbers.	CO2	PO1,2, 3	**07**
		b)	Write a C program to read temperature in centigrade and display a suitable message according to the temperature stated below. Temp < 0 then Freezing weather Temp 0-10 then Very Cold weather Temp 11-20 then Cold weather Temp 21-30 then Normal in Temp Temp 31-40 then Its Hot Temp >40 then Its Very Hot. Write the expected output Note: Above program should be written using else-if ladder statement.	CO2	PO1,2, 3	**07**
		c)	Compute the GCD of two given numbers using a C program.	CO2	PO1,2, 3	**06**
			OR			
	3	a)	Write a C program to find all the possible roots of Quadratic equation.	CO2	PO1,2, 3	**07**
		b)	Develop a C code to display the multiplication table for a number provided by the user. (Output to be of form 8x1=8)	CO2	PO1,2, 3	**07**
		c)	Print the below pattern using a C code. 1 2 3 4 5 6 7 8 9 10	CO2	PO1,2, 3	**06**
			UNIT - III			
	4	a)	Design a C program to multiply two matrices.	CO2	PO1,2, 3	**07**
		b)	Develop a C program to search a Book ID from an organized bookshelf which has N number of Books using appropriate searching technique.	CO2	PO1,2, 3	**07**
		c)	A school kid gets homework to check if a given number is prime or not. Help him by writing a C function for the same. Display the result in the main function.	CO2	PO1,2, 3	**06**
			OR			
	5	a)	Write a C code to swap the highest and the lowest element in an array.	CO2	PO1,2, 3	**07**
		b)	Unique IDs are allotted to 'n' students of a section. However by mistake a few IDs are repeated. Write a program to eliminate these duplicates.	CO2	PO1,2, 3	**07**
		c)	Write two C functions that computes the square and cube of a number. Both the functions should accept parameters and return the calculated value. Print the returned values in the main.	CO2	PO1,2, 3	**06**

			UNIT - IV			
	6	a)	Write C functions to perform the following operations. 1. Concatenate 2 strings 2. Find the length of a string (Do not use inbuilt functions)	CO2	PO1,2, 3	**12**
		b)	A small company wants to digitalize the employee information. The employee information to contain name, age, date of birth and salary. Suggest a suitable data structure for the same and write a C code to accept and store information of 5 employees.	CO2	PO1,2, 3	**08**
			UNIT - V			
	7	a)	Design a C program to add two numbers using pointers.	CO2	PO1,2, 3	**07**
		b)	Develop a C program that swaps two numbers using call by value and call by reference.	CO2	PO1,2, 3	**07**
		c)	Demonstrate how to read data from the keyboard, write it to a file called BMSCE, again read the same data from the BMSCE file, and display it on the screen/console.	CO2	PO1,2, 3	**06**

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