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

Autonomous Institute Affiliated to VTU

September 2024 Supplementary 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 in 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.

		UNIT - I	*CO*	*PO*	Marks
1	a)	Draw a flow chart to determine the largest of three numbers.	CO1	PO1,2	**5**

	b)	Predict the output of the following code snippets and justify your answer.
		i).
		int main()
		{
		int x = 5, y = 10;
		int z;
		z = x + 2 * y;
		printf("\n Output = %d", z);
		return 0;
		}
		ii).
		int main()
		{
		int x, y;
		x = 5;
		y = x++ / 2;
		printf("%d", y);
		return 0;
		}
		iii).
		int main()
		{
		int x, y;
		x = 10;
		y = 3;
		printf("%d %d", x/y, y/x);
		return 0;
		}
			CO1	PO 1,2	**6**

	c)	Identify the keywords and identifiers from the list below. {break, name, value, for, pay, do, case, check}	CO1	PO 1,2	**4**

		d)	Describe type conversion and type casting with a valid code.	CO1	PO 1,2	**5**
			UNIT - II			
	2	a)	Write a C program to find all the possible roots of Quadratic equation.	CO2	PO1,2, 3	**7**
		b)	Write a program using a while loop to read numbers until -1 is encountered. Calculate the sum of positive numbers and negative numbers entered by the user.	CO2	PO1,2, 3	**7**
		c)	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	**6**
			OR			
	3	a)	The following items are available at a grocery store. • Milk – 50Rs/lt • Dal – 80Rs/kg • Sugar – 60Rs/kg • Rice – 65Rs/kg Write a C program to read the quantity of each item purchased by the user and calculate the total bill. If the bill exceeds Rs400 the customer gets a discount of 5%. If the bill exceeds Rs500 the customer gets a discount of 6%. Print the final discounted price.	CO2	PO1,2, 3	**7**
		b)	Write a program using a while loop to calculate sum of even numbers from M to N. (Values of M and N to be taken from the user)	CO2	PO1,2, 3	**7**
		c)	Print the below pattern using a C code using an appropriate looping construct. 1 22 333 4444 55555	CO2	PO1,2, 3	**6**
			UNIT - III			
	4	a)	Write a C program to create a matrix of suitable order and make the diagonal elements as 0. Print the resultant matrix.	CO2	PO1,2, 3	**7**
		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	**7**
		c)	Write a C function to generate Fibonacci series and call it appropriately in main function.	CO2	PO1,2, 3	**6**
			OR			
	5	a)	Write a C program to calculate the product of two matrices.	CO2	PO1,2, 3	**7**
		b)	Unique IDs are allotted to ‘n’ employees of an organization. However, by mistake a few IDs are repeated. Write a program to eliminate these duplicates.	CO2	PO1,2, 3	**7**

		c)	Write a C function to calculate the percentage of marks scored by a student, whose marks are passed as a parameter. In the main function display the message "Excellent" if percentage is more than 90 and display "Improve" if percentage is less than 50. (Assume max marks of 3 subjects is 150)	CO2	PO1,2, 3	**6**
			UNIT - IV			
	6	a)	A pizza store offers a free pizza to customers whose name has 8 characters. Write a C code to help the store manager implement this scheme. (Do not use inbuilt functions)	CO3	PO1,2, 3	**6**
		b)	The organizing committee of an event wants to display a quote in upper case. Write a C program to accept the quote in lower case and print it in the desired way. (Do not use inbuilt functions)	CO3	PO1,2, 3	**6**
		c)	A car show room wants to maintain the information of the various cars. Each car has details such as Engine capacity, Max speed, Fuel type (Petrol, Diesel, Electric), Color and Mileage. Suggests a suitable data structure for the same and write a C code to accept, store display information of 5 cars.	CO3	PO1,2, 3	**8**
			UNIT-V			
	7	a)	Design a C program to add and subtract two numbers using pointers.	CO2	PO1,2, 3	**7**
		b)	Write a C program to swap two numbers using call by value and call by reference methods.	CO2	PO1,2, 3	**7**
		c)	Write a C program to read data from the keyboard, write it to a file, again read the same data from file, and display it on the console.	CO2	PO1,2, 3	**6**

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