Modified

CBCS SCHEME

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BPOPS103/203

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024

Principles of Programming Using C

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define a Computer. Explain the characteristics of a digital computer.	10	L1	CO1
	b.	Explain the basic structure of a C program with a neat diagram.	10	L1	CO1
		OR			
Q.2	a.	With a neat diagram explain the steps in the execution of C program.	10	L1	CO1
	b.	Explain the input and output statements in C with examples for each.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain the various operators in C.	10	L2	CO1
	b.	Explain the different forms of if statement with flowcharts.	10	L1	CO2
		OR			
Q.4	a.	Explain the switch statement with an example.	10	L2 L3	CO2
	b.	Explain break and continue statements with examples for each.	04	L2 L3	CO2
	c.	Write a C program to find the largest of 3 numbers using nested if statement.	06	L3	CO2
		Module – 3			
Q.5	a.	Discuss in detail the parts of a user-defined function.	10	L2	CO3
	b.	Discuss the storage classes in C.	10	L2	CO3
		OR			
Q.6	a.	Define recursion. Write a C program to find the factorial of 'n' using recursion.	05	L1 L3	CO3
	b.	What is an array? Explain the declaration and initialization of 1-D arrays.	05	L1 L2	CO3
	c.	Write a C program to perform Matrix Multiplication.	10	L3	CO3
		Module – 4			
Q.7	a.	Write functions to implement string operations such as compare concatenate and string length. Convince the parameter passing techniques.	10	L3	CO4
	b.	Develop a program using pointers to compute, sum, mean and standard deviation of all the elements stored in an array.	10	L3	CO4
		OR			
Q.8	a.	Define a pointer. Discuss the declaration of pointer variables.	05	L2	CO4
	b.	Discuss the various string handling functions in C.	10	L2	CO4
	c.	Write a C program to swap two numbers using call by reference technique.	05	L3	CO4
		Module – 5			
Q.9	a.	Define a structure. Explain the types of structure declarations with examples for each.	10	L1	CO4
	b.	Implement structures to read, write and compute average marks and the students scoring below and above average in a class of 'N' students.	10	L3	CO4
		OR			
Q.10	a.	Differentiate between structures and union.	06	L2	CO5
	b.	Define a structure by name DOB consisting of three members dd, mm and yy. Develop a C program that would read values to the individual member and display the date in the form dd/mm/yyyy.	06	L3	CO5
	c.	Explain the various file operations with syntax for each.	08	L2	CO5

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BPOPS103/203

Modified scheme

"Nirmala CR" <nirmala.cr@gmail.com> February 17, 2024 12:51 PM

To: boe@vtu.ac.in

Kindly find the modified scheme attached herewith
Thanks and regards

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BPOPS103/203

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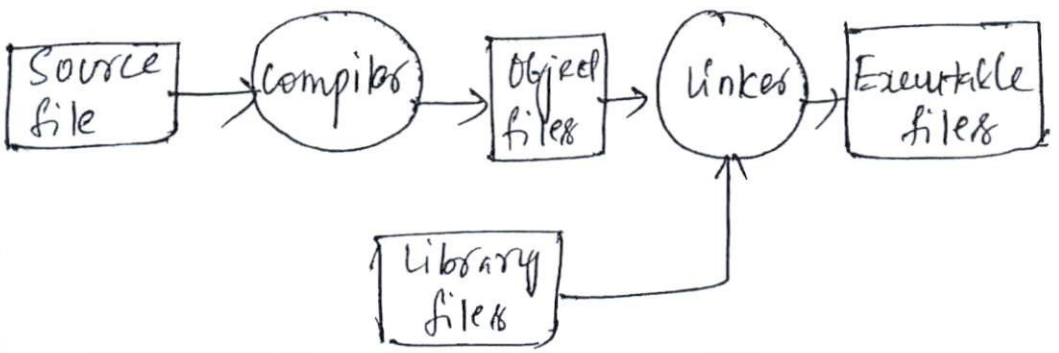
Scheme & Solutions

Signature of Scrutinizer

Subject Title : Principles of Programming Using C **Subject Code :** BPOPS103/203

Question Number	Solution	Marks Allocated
1a.	Definition of computer 1m Characteristics of digital computer - Speed - Accuracy - Automation - Diligence - Versatile - Memory - Economical - IQ - Consistency - Flexibility 9m Am	10M
b.	1. Comment Section 2. Preprocessor Section 3. Definition Section 4. Global Declaration 5. Main() function 6. User defined function Structure - 5m Explanation - 5m	10m
2a.	 Diagram 4m Explanation 6m	10m

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Question Number	Solution	Marks Allocated
2b.	Input and Output Statements printf() & scanf(), Explination of printf() Syntax, explination with example 5m Explination of scanf() Syntax, explination with example 5m	10m
3a.	Various operators in C - Arithmetic operators - Increment/Decrement - Relational operators - Assignment operators - Logical operators - comma operator - conditional operators - Bitwise operator - Special operator Explination of Any 5 with example 2*5m 10m	10 m
6.	if Statementforms - if Statement (simple if) - if-else - if-else-if - nested if 2.5*4m Flow Chart, Syntax with example	10m
4a.	Syntax with flowchart 5m Explaination with example 5m	10 m
b.	break Statement Syntax with example 2m continue Statement Syntax with example 2m	4m

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Question Number	Solution	Marks Allocated
4c.	Program to find largest of 3 numbers Using nested if statement	6m
5a.	Parts of user-defined function - function declaration - function call - function definition } List – 1m; Explanation of each with example 3*3m = 9m	10m
5b.	Storage classes in C - auto – register - extern – static } Explanation of each 2.5*4=10m	10m
6a.	Function that calls itself to solve a problem. 1m Program to find factorial of 'n' using recursion 4m	5m
6.	Definition of Array 1m Declaration of 1-D Array with syntax & example 2m Initialization of 1-D Array with syntax & example 2m	5m
c.	Program to perform matrix multiplication	10m
7a.	String ↑ Compare function with parameters – 4m String concatenation function with parameters – 4m String length function – 2m	10m

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Question Number	Solution	Marks Allocated
7b.	Program to compute sum – 2m mean – 2m Standard deviation – 4m complete program – 2m	10 m
8a.	Definition of pointer – 1m Declaration of pointer with syntax & example – 4m	5m
b.	String handling functions in C – strlen() – strcat() – strcmp() – strrev() – strcpy() – strncat() – strchr() – strncmp() – strstr() Explaination of any 5 functions with syntax & example 2*5m	10 m
c.	Program to swap two numbers using call by reference (pointers)	5m
9a.	Structure definition, 1m Structure syntax with example 5m typedefined (typedef) structure syntax with example 4m	10m

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Question Number	Solution	Marks Allocated
9b.	Program	10 m
10a.	Any 3 difference b/w Structures & Union 2*3= 6m	6 m
b.	Program to display the date in the form of dd/mm/yyyy	6m
c.	File Operations fread() fwrite() fopen() fclose() } Explanation of each with syntax and example 2*4m = 8m	8m

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