PANIMALAR ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to Anna University Chennai)

QUESTION BANK

Details of the Course

Name of the Department	**: Humanities and Science**
Name of the Course	**:** Programming in C
Course Code	**:** 23ES1106
Semester	**: I**
Common ToProgramme(s)	**: All Branches(Except CSBS)**

Instructions

Blooms Level: Blooms Level 1 & 2 is Lower Order (LO) Cognitive type, Blooms Level 3 & 4 is Intermediate Order Cognitive Type (IO) and Blooms Level 5 & 6 is Higher Order (HO) cognitive type.

2 Marks: For**each unit five questions should be of lower order (LO)** cognitive type and **five Questions should be of Intermediate order (IO)** cognitive type.

13 /15 /16 Marks: For each Unit **four questions should be of lower order (LO) cognitive type** i.e. remembrance type questions, **five should be of intermediate order** (IO) cognitive type i.e. understanding type questions and **One Question should be on Higher Order (HO)** Application / Design / Analysis / Evaluation / Creativity / Case study questions.

* HO Order is not applicable if the Question Pattern does not have Part C. In Such cases consider HO as IO.

** If the Mark for Part B &C is less than the maximum mark of the Question, Sub Divisions shall be added.

Course Outcome: (List the Course Outcomes of the Course)

CO1:Learn the syntax for C programming

CO2:Develop simple applications in C using basic constructs

CO3:Design and implement applications using arrays and strings

CO4:Develop and implement applications in C using functions and pointers.

CO5:Develop applications in C using structures and union.

CO6:Design applications using sequential and random access file processing.

Bloom's Level: BL1 - Remembering, **BL2** - Understanding, **BL3** - Applying, **BL4** - Analyzing, **BL5**– Evaluating,**BL6** - Creating.

Diagrams, Table Values, Equations must be legible and clear.

UNIT- I BASICS OF C PROGRAMMING				
	PART A (2 Marks)	**Bloom's Level**	**Course Outcome**	**Marks Allotted**
1.	Define an algorithm and a flowchart.	[BL1]	[CO1]	[2]
2.	What is meant by a data types? Give its classifications.	[BL1]	[CO1]	[2]
3.	What are keywords?	[BL1]	[CO2]	[2]
4.	Illustrate the concept of the programming paradigm.	[BL2]	[CO1]	[2]
5.	What are the input and output statements in C?	[BL1]	[CO2]	[2]
6.	Analyze Increment and Decrement Operators with an example.	[BL4]	[CO2]	[2]
7.	Examine the use of ternary or conditional operator.	[BL4]	[CO2]	[2]
8.	Differentiate between variable and identifier.	[BL4]	[CO2]	[2]

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9.	Examine the concept of preprocessor directives.	[BL4]	[CO2]	[2]
10.	Discuss the concept of type conversion in c	[BL4]	[CO2]	[2]
Descriptive Questions (16 Marks)				
1.	(i). Explain the characteristics and need of an algorithm. (ii). Write an algorithm to find the first N natural numbers.	[BL1]	[CO1]	[8+8]
2.	Describe the structure of a C program with an example.	[BL1]	[CO2]	[16]
3.	Explain the different types of operators used in 'C' with an example.	[BL1]	[CO2]	[16]
4.	Discuss the various Conditional Statements used in C with its syntax and program.	[BL2]	[CO2]	[16]
5.	Classify various looping statements in c with an example program.	[BL4]	[CO2]	[16]
6.	Develop a C program for the following: (i) To check whether a number is prime or not. (ii)To convert the temperature given in Fahrenheit to Celsius and its vice versa.	[BL3]	[CO2]	[8+8]
7.	Analyze various conditional control Statements with an example program.	[BL4]	[CO2]	[16]
8.	Examine the concept of storage classes in c with an example program.	[BL4]	[CO2]	[16]
9.	Distinguish between branching and looping statements used in c programming.	[BL4]	[CO1]	[16]
10.	Develop a C program for the following: (i) To check whether the given number is palindrome or not. (ii)To check whether the given number is an armstrong or not.	[BL3]	[CO2]	[8+8]

UNIT- II ARRAYS AND STRINGS				
	PART A (2 Marks)	**Bloom's Level**	**Course Outcome**	**Marks Allotted**
1.	What is an array? Write the syntax for array.	[BL1]	[CO3]	[2]
2.	List out the advantages of Arrays.	[BL1]	[CO3]	[2]
3.	What is arithmetic mode, give an example?	[BL1]	[CO3]	[2]
4.	What is the role of strrev() function.	[BL1]	[CO3]	[2]
5.	List the various string handling functions in C	[BL1]	[CO3]	[2]
6.	Distinguish between one dimensional and two dimensional array.	[BL4]	[CO3]	[2]
7.	Construct the list of operations in an array.	[BL3]	[CO3]	[2]
8.	State any four features of array.	[BL3]	[CO3]	[2]
9.	Examine the output of the following Code: main() { char x; x = 'a';	[BL4]	[CO3]	[2]

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	printf(“%d\n”, x); }			
10.	Distinguish between sorting and searching.	[BL4]	[CO3]	[2]
Descriptive Questions (16 Marks)				
1.	Write a C program to add and subtract two 3 x 3 matrices.	[BL2]	[CO3]	[16]
2.	Write a C program to find the number of vowels, consonants, digits and white spaces in a string.	[BL2]	[CO3]	[16]
3.	Write a C program for matrix multiplication.	[BL2]	[CO3]	[16]
4.	Illustrate the concept of mean, median with an example program.	[BL2]	[CO3]	[16]
5.	Classify various string handling functions with an example program.	[BL4]	[CO3]	[16]
6.	Implement the concept of selection sort with an example program.	[BL3]	[CO3]	[16]
7.	Apply the insertion sort technique to sort the given numbers 56,1,7,9,7,14 with an example program.	[BL3]	[CO3]	[16]
8.	Construct a c program to find an element using binary search.	[BL3]	[CO3]	[16]
9.	Construct the concept of Linear Search with an example program.	[BL3]	[CO3]	[16]
10.	Analyze the concept of matrix determinant and transpose with an example program.	[BL4]	[CO3]	[16]

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UNIT- III- FUNCTIONS AND POINTERS				
	PART A (2 Marks)	**Bloom's Level**	**Course Outcome**	**Marks Allotted**
1.	Define function with its syntax.	[BL1]	[CO4]	[2]
2.	List any 6 functions used in math library.	[BL1]	[CO4]	[2]
3.	Define recursion?	[BL1]	[CO4]	[2]
4.	What is function prototype?	[BL2]	[CO4]	[2]
5.	Write about function call and function definition with an example.	[BL1]	[CO4]	[2]
6.	Differentiate between pass by value and pass by reference.	[BL4]	[CO4]	[2]
7.	Construct the concept of pointer arithmetic.	[BL3]	[CO4]	[2]
8.	Examine the concept of null pointer and dangling pointer.	[BL4]	[CO4]	[2]
9.	Distinguish between user defined function and built in function.	[BL4]	[CO4]	[2]
10.	Classify various pointer operators used in c programming.	[BL4]	[CO4]	[2]
	Descriptive Questions (16 Marks)			
1.	Describe about user defined function and predefined function with an example.	[BL1]	[CO4]	[16]
2.	Discuss about the classification of functions depending upon their inputs and output (parameters).	[BL2]	[CO4]	[16]
3.	Explain in detail about pass by value and pass by reference with an example.	[BL1]	[CO4]	[16]
4.	Write about Pointer Arithmetic and illustrate the arithmetic operations performed on pointer variables.	[BL1]	[CO4]	[16]
5.	Develop a C program to perform sorting in names.	[BL3]	[CO4]	[16]
6.	Construct a calculator program using recursion.	[BL3]	[CO4]	[16]
7.	Write a program to sum the following series : 1/1! + 1/2! + 1/3! + ……+ 1/n!	[BL3]	[CO4]	[16]
8.	Explore a function in C to find the greatest among three numbers	[BL4]	[CO4]	[16]
9.	(i)Write a program to find whether a number is divisible by two or not using functions. (ii) Write a program to find the simple interest using functions	[BL3]	[CO4]	[8+8]
10.	Narrate the concept of Array and Pointers with Examples.	[BL4]	[CO4]	[16]

UNIT- IV- STRUCTURES AND UNION				
	PART A (2 Marks)	**Bloom's Level**	**Course Outcome**	**Marks Allotted**
1.	What is structure?	[BL1]	[CO5]	[2]
2.	Where is Union used in C?	[BL1]	[CO5]	[2]

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3.	What is a nested structure?	[BL1]	[CO5]	[2]
4.	Define self referential structure with an example.	[BL2]	[CO5]	[2]
5.	Interpret the realloc() with its syntax.	[BL2]	[CO5]	[2]
6.	Differentiate between structure and union.	[BL4]	[CO5]	[2]

7.	Examine the output of the following program?
	#include<stdio.h>
	void main ( )
	{
	enum days {MON=-1, TUE, WED=4, THU,FRI,SAT};
	printf("%d, %d, %d, %d, %d, %d", MON, TUE, WED,
	THU, FRI, SAT);
	}
		[BL4]	[CO5]	[2]

8.	Compare the structure and array.	[BL4]	[CO5]	[2]
9.	What is dynamic memory allocation?	[BL3]	[CO5]	[2]
10.	Specify the use of typedef.	[BL3]	[CO5]	[2]
	Descriptive Questions (16 Marks)			
1.	Write a c program to create a student structure and structure members are roll no, name, mark1, mark2, mark3, total, average. Read and print the details of structure.	[BL1]	[CO5]	[16]
2.	Explain about nested structures with an example program.	[BL2]	[CO5]	[16]
3.	Define Union. Describe how to declare, initialize and access members of Union with a programming example.	[BL1]	[CO5]	[16]
4.	Explain about Dynamic Memory allocation with an example program.	[BL1]	[CO5]	[16]
5.	Interpret the concept of typedef with a suitable example program.	[BL3]	[CO5]	[16]
6.	Examine the differences between nested structures and Array of structures.	[BL3]	[CO5]	[16]
7.	Implement with an example for self-referential structure.	[BL4]	[CO5]	[16]
8.	(i)Compare with example code for Structure and Union. (ii)Illustrate a C program to store the employee information using Structure and search a particular employee details.	[BL4]	[CO5]	[8+8]
9.	Create a C program to read the details of book name, author name and price of 200 books in a library and display the total cost of the books and the book details whose price is above Rs.500.	[BL4]	[CO5]	[16]
10.	Explain passing structures to a function with respect to the following: (i). Passing individual members. (ii). Passing entire structure.	[BL4]	[CO5]	[8+8]

UNIT- V FILE PROCESSING			
PART A (2 Marks)	**Bloom's Level**	**Course Outcome**	**Marks Allotted**

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1.	What is the purpose of the fopen() function in C?	[BL1]	[CO6]	[2]
2.	Mention the modes of opening a file in C.	[BL2]	[CO6]	[2]
3.	What does the fgetc() function do in C?	[BL1]	[CO6]	[2]
4.	What is the purpose of the fread() and fwrite() function in C?	[BL1]	[CO6]	[2]
5.	List the functionality of fseek() and ftell()	[BL1]	[CO6]	[2]
6.	Compare the sequential access and random access methods in files.	[BL4]	[CO6]	[2]
7.	Conclude the benefits of command line arguments.	[BL4]	[CO6]	[2]
8.	How do you move the file pointer to the beginning of a file?	[BL4]	[CO6]	[2]
9.	Distinguish between binary file and text file.	[BL4]	[CO6]	[2]
10.	Develop a c program to copy the contents of one file to another file.	[BL3]	[CO6]	[2]
Descriptive Questions (16 Marks)				
1.	Explain the details about files and its types of file processing?	[BL2]	[CO6]	[16]
2.	Demonstrate a c program for command line arguments to add two numbers.	[BL2]	[CO6]	[16]
3.	Write a c program to find the average of numbers stored in sequential access file	[BL2]	[CO6]	[16]
4.	Explain about random access file with an example program.	[BL2]	[CO6]	[16]
5.	Construct a c program for transaction processing using random access file.	[BL3]	[CO6]	[16]
6.	Elaborate the function of fseek() and ftell() with an example program.	[BL4]	[CO6]	[16]
7.	Implement the various file functions used in a file processing with an example program.	[BL4]	[CO6]	[16]
8.	Construct a C program to read name and marks of “N” number of students from user and store them in a file?	[BL3]	[CO6]	[16]
9.	(i)Compute short notes on fscanf (). (i)Compute short notes on fprintf ().	[BL3]	[CO6]	[8+8]
10.	Incorporate the methodology of sequential access file with an example program.	[BL4]	[CO6]	[16]

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