PVP 20

Code: 20ES1401

II B.Tech - II Semester – Regular / Supplementary Examinations
MAY 2024

PROGRAMMING WITH C
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Provide a brief history and evolution of the C programming language and highlight the key features and characteristics of C.	L2	CO1	7 M
	b)	Explain arithmetic operators in C (+, -, *, /, %) and also discuss the order of precedence.	L3	CO2	7 M
OR					
2	a)	Interpret different types of constants in C and their usage with appropriate examples.	L3	CO2	7 M
	b)	Explain the concept of primitive data types in C and explore data type modifiers in C.	L2	CO1	7 M
UNIT-II					
3	a)	Illustrate the use of the break statement in a C program and create a C program using the continue statement to skip printing even numbers in a given range.	L3	CO2	7 M

	b)	Interpret the usage of following functions for string operations i) strcpy(char * strsrc, char *strdst) ii) strcmp(char * str1, char * str2)	L3	CO2	7 M
OR					
4	a)	Provide the syntax and usage of nested loops. Construct a C program using nested loops to create a pattern of pyramid and square.	L3	CO2	7 M
	b)	Construct a C Program that demonstrates linear search on arrays and explain the benefits of linear search.	L3	CO2	7 M
UNIT-III					
5	a)	Explain the process of calling a function in C. Discuss the role of arguments and return values in function calls. Provide an example demonstrating the use of a function with multiple parameters.	L3	CO3	7 M
	b)	Define recursion and explain how it works in C programming. Write a C program of Recursive function to print the first N natural numbers.	L4	CO4	7 M
OR					
6	a)	Analyze the differences between Call by Value with Call by Reference. Provide an example demonstrating Call by Reference and discuss its advantages.	L4	CO4	7 M

	b)	Differentiate between the characteristics, usage scenarios and impact on variable storage of auto and register storage classes.	L3	CO3	7 M
		UNIT-IV			
7	a)	Discuss how pointer arithmetic operations can be performed on pointers with appropriate examples.	L3	CO3	7 M
	b)	Discuss the need of functions like **"malloc"," calloc", "realloc"**, and **"free"** for dynamic memory allocation with examples.	L3	CO3	7 M
		OR			
8	a)	Describe any five pre-processor directives with examples.	L3	CO3	7 M
	b)	Explain the concept of array of pointers and interpret the situations where arrays of pointers are beneficial using an example.	L3	CO3	7 M
		UNIT-V			
9	a)	Illustrate how to pass an array of structure as an argument to a function and accessing members of array of structure with appropriate example.	L3	CO3	7 M
	b)	Discuss the basic operations related to files, such as opening, closing, reading and writing and write a C program to count the number of characters, words and lines in a file.	L3	CO3	7 M

OR					
10	a)	Differentiate between structures and unions demonstrating the use of unions in C programming with examples.	L3	CO3	7 M
	b)	Illustrate the use of different file modes in opening a file and the importance of error handling.	L3	CO3	7 M