Sub code: R25ES01		R25

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(UGC - Autonomous)

(Approved by AICTE, Recg. by Govt. of T.G & Affiliated to JNTU, Hyderabad) NAAC "A" Accredited Institute

B.Tech I Year I Semester Regular December 2025/January 2026

PROBLEM SOLVING AND PROGRAMMING WITH C
(**Common to EEE, MECH, ECE, CSE, CSE (CS), CSE (AI&ML), CSE (DS)**)

Time: 3hours		Max. Marks: 60

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 10 marks. Answer all questions in Part A.

Part B consists of ten questions from 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART-A

(10 Marks)

			BT Level	Marks
1.	a	Differentiate between compiler and interpreter? What are the errors occurring while compiling a program? Explain	L2	2M
	b	How to declare array? How to initialize 1-D, 2-D array with an example.	L1	2M
	c	a) Define pointer. How can you declare it?	L1	2M
		b) what is string? how to declare and initialize string	L1	
	d	Comparison between Structure and Union?	L4	2M
	e	a) Write the syntax of rewind	L1	2M
		b) What is the use of preprocessor directive	L1	

PART-B

(50 Marks)

2.		a) Executing a C program and illustrate it will the help of flow chart.	L5	10M
		b)Define Data types. Briefly discuss the fundamental data types supported in C	L1	
		c) Executing a C program and illustrate it will the help of flow chart.	L5	
		OR		
3.		a) classify various control statement available in C	L2	10M
		b) List and explain loops (or) iteration statements in C.	L2	
		c) Explain about switch statement? Write a Program to perform arithmeticoperations using switch.	L2	
		OR		10M
4.		a). What is an array and types of an array? How to declare and initialize 1-D, 2-D array with an example	L2	
		b) Define an array and develop a program to find the addition of two matrices	L1	
		OR		10M
5.		a) Discuss various methods of passing parameters to function with suitable C code	L2	10M
		b) Define recursion. Write a recursive function for factorial of a given number	L1	
		c) write a program to print Fibonacci series using recursion	L1	
6.		a) Explain the declaration of pointers and pointer to pointer with examples.	L2	10M
		b) With proper examples explain different arithmetic operations on pointers	L2	

		OR		10M
7.		a) Explain the following string handling functions with example with example program a. strcpy () b. strcmp () c. strcat () d. strlen () e. strncat ()	L2	
		b) Explain about dynamic memory allocation? write about a) malloc b) calloc c) realloc d) free	L2	
8.		a) What is a structure? Explain how to initialize, declare and access the structure elements	L2	10M
		b) Write a C program to read and display student details using structure.	L1	
		or		10M
9.		a) Define Union. Write the advantages of union over structure. Justify your answer.	L1	
		b) Explain about self-referential structures with a example	L2	
10.		a) Write a C program to copy the contents from one file to another file.	L1	10M
		b) Explain the following file handling functions: a) fseek () b. ftell () c. rewind ()	L2	
11.		a) Define preprocessor Directive? What is the use of pre-processor directive? Briefly explain the different preprocessor commands	L1	
		b) Demonstrate on enumerated data type. With a example program	L3	