

Course: B.Tech

Branch : Common to All

Subject Code & Name: 24AF1000ES106A - PROGRAMMING FOR PROBLEM SOLVING

Semester :I

Max Marks: 60

Date:24/01/2026

Duration: 3 Hr.

Instructions to the Students:

1. Each question carries 12 marks.
2. Question No. 1 will be compulsory and include objective-type questions.
3. Candidates are required to attempt any four questions from Question No. 2 to Question No. 6.
4. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
5. Use of non-programmable scientific calculators is allowed.
6. Assume suitable data wherever necessary and mention it clearly.

		(Level/CO)	Marks
Q. 1	Objective type questions. (Compulsory Question)		12
1	Which data type is used to store decimal numbers in C? a) int b) char c) float d) void	Remember	1
2	Which statement is used to skip the current iteration of a loop? a) break b) exit c) continue d) return	Remember	1
3	Which symbol is used to indicate the address of a variable? a) * b) & c) # d) @	Remember	1
4	Which of the following is a library function in C? a) add () b) multiply () c) printf () d) factorial ()	Remember	1
5	Which of the following is an output device? a) Mouse b) Keyboard c) Scanner d) Printer	Remember	1
6	Which operator is used to compare two values for equality? a) = b) != c) == d) <=	Remember	1

7	A string in C is terminated by which character? a) newline (\n) b) space () c) null character (\0) d) tab (\t)	Remember	1
8	Which keyword is used to define a union? a) struct b) typedef c) union d) enum	Remember	1
9	Which of the following is used to close a file in C? a) close () b) endfile () c) fclose () d) fileclose ()	Remember	1
10	Which file mode is used to append data to an existing file? a) r b) w c) a d) r+	Remember	1
11	Which pointer stores the address of another pointer? a) null pointer b) dangling pointer c) pointer to pointer d) void pointer	Remember	1
12	Which unit performs arithmetic and logical operations in a computer? a) Control Unit b) Memory Unit c) Arithmetic Logic Unit d) Input Unit	Remember	1
Q. 2 Solve the following.			12
A)	Explain the different phases of the C program execution process. Also describe syntax errors with examples.	Understand	6
B)	Describe the components of computer memory hierarchy. Explain primary and secondary memory with a neat diagram.	Understand	6
Q.3 Solve the following.			12
A)	Write a C program to find whether a given number is positive, negative, or zero.	Apply	6
B)	Explain increment and decrement operators. Also explain assignment operators with suitable examples.	Understand	6
Q. 4 Solve Any Two of the following.			12
A)	Explain the concept of recursion in C with advantages and disadvantages.	Understand	6

B)	Write a C program using a user-defined function to check whether a number is a palindrome. (Note: A palindrome is a value (number, word, or string) that reads the same forward and backward. e.g. 1331, 4554)	Apply	6
C)	Explain storage classes in C.	Understand	6
Q.5	Solve Any Two of the following.		12
A)	Write a C program to sort an array of integers using bubble sort.	Apply	6
B)	Explain string handling functions in C with examples. Write a program to concatenate two strings.	Apply	6
C)	Explain dynamic memory allocation using malloc(), calloc(), realloc() with examples.	Apply	6
Q. 6	Solve Any Two of the following.		12
A)	Write a C program to copy the contents of one file into another file.	Apply	6
B)	Explain structures and unions. Compare structures and unions with examples.	Understand	6
C)	Explain looping statements in C: a) while loop b) do-while loop	Understand	6

***** End *****