

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: BCA
BRANCH: BCA**

**SEMESTER : I
SESSION : MO/2025**

SUBJECT: CA25101 PROGRAMMING AND PROBLEM-SOLVING USING C

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
-

		CO	BL
Q.1(a)	What is problem solving, and why is it important in everyday life? Explain.	[5] 1	2
Q.1(b)	What is a flowchart? How can flowcharts assist in solving computational problems? Explain with an example.	[5] 1	3
Q.2(a)	What are the control structures available in C? Why are control structures required in a program?	[5] 1	2
Q.2(b)	Write a program to find the smallest of N numbers supplied at run time? Do not use array.	[5] 1	3,4
Q.3(a)	Illustrate the initialization of a two-dimensional array with an example, and show its memory representation with the help of a diagram.	[5] 2	3,4
Q.3(b)	Write a program in C to concatenate two strings without using the strcat() function.	[5] 2	5
Q.4(a)	What is meant by a function's parameters? Distinguish between actual and formal parameters with examples.	[5] 3	2,3
Q.4(b)	Write a recursive function to sum of all positive even integers less than N, where N is an even integer.	[5] 3	3,4,6
Q.5	How is a structure different from an array? Write a program to store records of 50 employees, where each record contains following information: Employee's name, Employee's Id, Designation, Department, and Basic pay. Extend your program to display the records of the employees whose basic pay is greater than 50,000.	[10]	4,5 6

.....20/11/2025.....E