

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

**CLASS: BCA
BRANCH: BCA**

**SEMESTER : 1st
SESSION : MO/2024**

SUBJECT: CN101 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.
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Q.1(a)	Explain the primary data types available in C. Provide examples of each type and explain how variables are declared and initialized using these data types.	[5]	1	1
Q.1(b)	What are different operators in C? Explain the uses of bitwise operators with suitable examples.	[5]	1	2,3
Q.2(a)	Compare the while, do-while, and for loops. When would you prefer one over the others?	[5]	1	2,4
Q.2(b)	Write a program to compute the sum and average of N numbers as entered by the user. Do not use array to store numbers.	[5]	1	2,3,5
Q.3(a)	Differentiate between one-dimensional and two-dimensional arrays. How do you declare and initialize one-dimensional and two-dimensional arrays in C. Provide a C program to illustrate the use of a two dimensional array.	[5]	2	2,3
Q.3(b)	What do you mean by a string? Explain any two string handling functions available in C and demonstrate their uses in a program.	[5]	2	1,2,3
Q.4(a)	Define function. Discuss the concept of call by value and call by address with examples.	[5]	3	1,2,5
Q.4(b)	What do you mean by the term recursion? Define a recursive function to compute sum of first N natural number.	[5]	3	1,3
Q.5	Define a structure in C. Explain how to declare and access structure members, and provide an example that uses an array of structures.	[10]	4	1,3,5

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