

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

**CLASS: BTECH/IMSC
BRANCH: CSE/AIIML/ECE/EEE/MATHS**

**SEMESTER : II/ADD
SESSION : SP/2025**

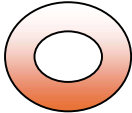
SUBJECT: CS24101 / CS101 PROGRAMMING FOR PROBLEM SOLVING

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) What is bug in C Program? The process of correcting bugs is known as? List the types of bugs noticed by you during the journey of learning/writing C Program. Could you categorize which types of bugs are common bugs and non-common bugs explain with examples. "Bugs are essential part of the Program": Agree/Not Agree. Justify your Answer.	[5] 1	2
Q.1(b) You had joined in a hardware company, that manufactures Dish Washers. To estimate the shipping costs, your company needs to compute the weight of a specified quantity of Dish Washers. Write the flowchart/algorithm/pseudocode for this computation. Sample size of Dish washers	[5] 1	3
		
Q.2(a) Explain about the Structure of a C program. Describe variables, data types, operator precedence and associativity with examples.	[5] 2	1
Q.2(b) Write a C program to enter a decimal number. Calculate and display the Octal equivalent of the Input number. The program must be smart enough to judge whether the input number is decimal or not.	[5] 2	3
Q.3(a) What is the equivalent statement in program C to control the decisions? Explain with examples. Discuss the different types of Decision control mechanisms available in C with examples.	[5] 3	2
Q.3(b) Write a C program, which will accept the input of 5 single digit numbers and print the smallest and largest 5-digit number, using these numbers also print the difference between highest and smallest.	[5] 3	3
Q.4(a) Why are functions needed in C programming? Discuss with examples. Describe all types of storage class C Supports with examples.	[5] 4	2
Q.4(b) Suppose n teams participated in the IPL cricket this year. Each team plays with every other team twice, once at home and once away. Write a C program using a function which will calculate and print total number matches in the league phase of the IPL.	[5] 4	3
Q.5(a) Discuss your understanding about Structures and Pointers in C with examples. Pointers and Structures make C program easier. Justify your answer with example. Explain the role of Null pointer with an example.	[5] 5	2
Q.5(b) Write a C program to read, display, add and subtract two complex numbers.	[5] 5	3