

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

**CLASS: BTECH/IMSC
BRANCH: BT/CHEMICAL/CIVIL/MECH/PIE/FT**

**SEMESTER : 1st
SESSION : MO/2022**

SUBJECT: 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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	CO	BL
Q.1(a) Describe any four basic data types in C.	[5] CO1	2
Q.1(b) Explain typecasting with an example.	[5] CO1	2
Q.2(a) Write a program in C to take an integer number as user input and check if it is a palindrome or not.	[5] CO2,3	2
Q.2(b) Write a program to print the following pattern: 1 12 123 1234 12345	[5] CO2,3	2
Q.3(a) Write a program in C to implement binary search algorithm.	[5] CO2,3	2
Q.3(b) Compute the output of the following C program using arrays: #include <stdio.h> int main () { int A [10]= {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}; int i, j, B[5]; for (i=0, j=0; i<5; i++, j=j+2) { B[i]= A[j]; } for (i=0; i<5; i++) { printf(“%d \n”, B[i]); } return 0; }	[5] CO2,3	3
Q.4(a) Define a recursive function with an example.	[5] CO3,4	1
Q.4(b) Explain the difference between passing arguments to a function by reference and by value with appropriate examples.	[5] CO3,4	2
Q.5(a) Differentiate between a structure and an array.	[5] CO4,5	2
Q.5(b) Write a program in C to find the largest of three integer numbers using pointers.	[5] CO4,5	3