



National Institute of Technology Goa

Programme Name: **B.Tech**

End Semester Examinations, July-2021

Course Name: Computer Programming and Problem Solving

Date: **29/07/2021**

Duration: **3 Hours**

Course Code: CS100

Time: 9.30AM-12.30AM

Max. Marks: **100**

ANSWER ALL QUESTIONS

1. Design an algorithm for converting a binary number into decimal. Write the flowchart of the problem solution. (15)
2. Write a program that takes 3 different alphabet-character inputs from the user and display them in the alphabetical order. (15)
3. Create a structure to store the following employee details : name, employee ID, Basic Salary, Date of Joining. Create a menu and write the code to implement the functionalities to register a new employee, display employee information, display count of total employees and display the average salary of all the employees. (20)
4. Write a program to read a line of text and output the number of words, number of characters, number of vowels and consonant's in it. The program should also invert the case of each letter. (20)
5. Explain in detail how a specific term of a fibonacci number is generated using recursion. (10)
6. Give an example and explain in detail a scenario where if-else ladder is more suitable than switch case. (10)
7. Explain different classification of user defined functions based on parameter passing and return type with examples. (10)