



Indian Institute of Information Technology Vadodara
End-Semester Examination, Autumn 2024-25
IT101: Computer Programming and Problem Solving

Exam Duration: 90 Minutes

Max. Marks: 45

Important Instructions:

- **Answer questions in the given order, else a penalty will be awarded.**
- Use clear and precise reasoning. Marks will be awarded for clarity and correctness.
- If assumptions are made, clearly state them.
- Do not write anything, except your name and id on the question paper.

Q1:

a) Write a C program to reverse an input string (word by word). **[6 Marks]**

Example:

Input string: reverse this string word by word

Output string: esrever siht gnirts drow yb drow

b) Given a 2-D array of characters (some input strings stored in a 2-D array), write a C code to exchange the position of the 3rd and 4th name using a 2-D array and using an array of pointers to strings and compare both the programming solutions. Do not use any inbuilt library function.

[6 Marks]

c) Write a C code to print the elements of a 2-D array of integers using a pointer to an array.

[6 Marks]

Q2: Draw a flowchart to find the roots of a quadratic equation. **[6 Marks]**

Q3: Differentiate pointers to functions and function returning pointers by writing a C code.

[6 Marks]

Q4: Explain functions with variable number of arguments by writing a C code for finding the average of the numbers from the given set of values. **[6 Marks]**

Q5: Explain all bitwise operators with examples. **[9 Marks]**