

Quiz-1 -PHY617/PHY473-Computational Physics

13th Feb, 2025

Total Marks: 20, **Time:** 1 hour.

Answer all the questions. Explain the algorithm you are using for each question.

Question 1. Write a program to calculate and print the factorial of a number entered by the user.

(a) You should write an user-defined function for factorial using integer variables, not floating-point ones. Use your program to calculate the factorial of 200. **[5 Marks]**

(b) Now modify your program to use floating-point variables instead and again calculate the factorial of 200. What do you find? Explain. **[5 Marks]**

Question 2. Find all zeros of $f(x) = x - \tan x$ in the interval $(0, 20)$ by the method of *bisection*. **[10 Marks]**