

Third Semester Internal Examination, September 2024
Major Course in Physics
PHY3CJ202 COMPUTATIONAL PHYSICS

Time: 1 Hr

Max Marks: 35

Name:	Marks Scored	Section A		Total Marks
Class:		Section B		
		Section C		

Section A

(Each question carries 3 marks, Max marks for section – 7 marks)

1. State the difference between deductive and inductive reasoning
2. What is a tuple? Explain it's properties.
3. Write programs using If statement, If Else statement and if...Elif...else statement

Section B

(Each question carries 6 marks, Max marks for section – 18 marks)

4. Write an algorithm to sort a list of numbers using the Bubble Sort technique.
5. Write an algorithm to generate the Fibonacci series up to N terms.
6. Write python programs (1) to add and subtract two 3x3 matrices
(2) also to find its transpose
7. Write python program for a 3D plot of a parabolic potential well

Section C

(Answer any one question, Each question carries 10 marks)

8. Write the algorithm and python program to find the value of $\sin x$ and $\cos x$ using Taylor series expansion for different values of x .
9. Write the algorithm and python program to evaluate the $\int_0^\pi \sin x dx$ using Trapezoidal rule of integration.