



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF PHYSICS
2024_2 EXAMINATION

COURSE CODE: PHY314
COURSE TITLE: NUMERICAL COMPUTATIONS
CREDIT UNIT: 2
TIME ALLOWED: (2 HRS)
INSTRUCTION: Answer question 1 and any other two questions

QUESTION 1

- (a) Explain the term algebraic equation and its expression
- (b) Discuss the five (5) procedure involved in bisection method
- (c) Write Regula – falsi method formula
- (d) Illustrate the step involved in secant method

QUESTION 2

- (a) Define iteration methods Jacobi
- (b) Mention two (2) types of round off error
- (c) Give three (3) advantages and disadvantages of secant method

QUESTION 3

- (a) Define Gauss Seidel Method
- (b) Differentiate between well-conditioned and ill conditioned
- (c) Approximate the following decimal numbers to three (3) digits by using rounding and chopping rules.

Numbers	Rounding	Chopping
$x_1 = 1.34579$	---	---
$x_2 = 1.34679$	---	---
$x_3 = 3.34379$	----	---

QUESTION 4

- (a) What is a polynomial equation
- (b) Differentiate between accuracy and precision
- (c) Write the following numbers in scientific notation
- (i) 0.0759 (ii) 2500 (iii) 21 (iv) 240000 (v) 27.567

QUESTION 5

- (a) Define Secant Method
- (b) Differentiate between zero and identity matrix
- (c) Consider the set of point (1,1), (-2,-1) and (3,2)
Plot these points and the least squares regression line in the same graph