



**NATIONAL OPEN UNIVERSITY OF NIGERIA,
UNIVERSITY VILLAGE, PLOT 91 CADASTRAL ZONE NNAMDI AZIKIWE
EXPRESSWAY JABI, ABUJA NIGERIA
FACULTY OF MANAGEMENT SCIENCES
DEPARTMENT OF PUBLIC ADMINISTRATION
2024_2 EXAMINATION**

COURSE CODE: PAD 813

COURSE TITLE: QUANTITATIVE METHODS FOR PUBLIC ADMINISTRATION

CREDIT UNITS: 3

TIME ALLOWED: 3Hrs

INSTRUCTIONS:

- 1. Attempt four (4) questions in All, Question one (1) and any other three (3)**
- 2. Question number 1 is compulsory and carries 25 marks, while the other questions carry 15 marks each**
- 3. Present all your points in coherent and orderly manner**

Q1a Define Theoretical Probability (10 Marks)

Q1b State the Laws of Probability (5 Marks)

Q1c Bayes theorem is a formula which can be thought of as “reversing” conditional probability. Discuss. (10 marks)

Q2a What is Expected Values in relation with probability and state the formula of Expected value (5 Marks)

Q2b An ice-cream salesman divides his days into ‘Sunny’ ‘Medium’ or ‘Cold’. He estimates that the probability of a sunny day is 0.2 and that 30% of his days are cold. He has also calculated that his average revenue on the three types of days is N220, N130, and N40 respectively. If his average total cost per day is N80, calculate his expected profit per day. (10 Marks)

Q3a Is algebra the branch of mathematics discuss. (10Marks)

Q3b List the basic rules and properties of algebra. (5 Marks)

Q4 Define factorization and find x in the quadratic equation: $X^2 + X - 12 = 0$ (15 Marks)

Q5 The quadratic formula helps us solve any quadratic equation. Discuss. (15 Marks)