



NATIONAL OPEN UNIVERSITY OF NIGERIA

Plot 91, Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi - Abuja

FACULTY OF MANAGEMENT SCIENCES

2022_2 EXAMINATION

COURSE CODE: BUS 800

COURSE TITLE: QUANTITATIVE ANALYSIS

CREDIT UNIT: 2

INSTRUCTION:

1. Indicate your Matriculation Number clearly
2. Attempt question one (1) and any other two (2) questions; **THREE** questions in all
3. Question one (1) is compulsory and carries 30 marks, while the other questions carry 20marks each.
4. Present all your points in a coherent and orderly Manner

TIME ALLOWED: 2 Hours

QUESTION ONE

(a) Consider the following contingency table for the salary range of 94 employees: **15 marks**

Salary/month	Men	Women	Total
N10, 000 and above	20	37	57
Below N10, 000	15	22	37
TOTAL	35	59	94

What is the probability of selecting an employee who is a man or earns below N10, 000 per month?

(b) With the aid of examples, discuss the Multiplication Law for Independent Events **15 marks**

QUESTION TWO

By recording the daily demand for a perishable commodity over a period of time, a retailer was able to construct the following probability distribution for the daily demand levels:

s_j	$P(s_j)$
1	0.5
2	0.3
3	0.2
4 or more	0.0

The opportunity loss table for this demand-inventory situation is as follows: Table 14.4: The Opportunity Loss Table

Action, Inventory	State of Nature, Demand		
	$s_1(1)$	$s_2(2)$	$s_3(3)$
a1 (1)	0	3	6
a2 (2)	2	0	3
a3 (3)	4	2	0

Required: find the inventory level that minimises the expected opportunity loss. **20 marks**

QUESTION THREE

Assume there is a drug store with 10 antibiotic capsules of which 6 capsules are effective and 4 are defective. What is the probability of purchasing the effective capsules from the drug store?

20 marks

QUESTION FOUR

- (a) State clearly in which situation must the decision maker be for us to refer to him being in a state of making decision under uncertainty. **10 marks**
- (b) List and discuss briefly the available techniques that a decision maker can use to analyse problems under the situation identify in Question 4(a) above. **2 marks x 3 = 10 marks**