NATIONAL OPEN UNIVERSITY OF NIGERIA
91, CADASTRAL ZONE, NNAMDI AZIKWE EXPRESS WAY, JABI – ABUJA
FACULTY OF MANAGEMENT SCIENCES
2023_1 POP EXAMINATION.

COURSE CODE: BUS 800   **CREDIT UNIT: 2**
COURSE TITLE: Quantitative Analysis
TIME ALLOWED: 2Hrs
INSTRUCTION: 1. **Attempt question number one (1) and any other (2) questions.**
                          2. **Question number 1 carries 30 marks, while the other two (2) questions carry 20 marks each.**
                          3. **Present all your points in coherent and orderly manner.**

1a. Discuss any five (5) classification of Models.   **4marks each = 20marks**

1b. Find the equality of sets F & G also set A & B   **10marks**

2a. Dangote group has constructed the matrix payoff table below. Using the Expected monetary value criterion, analyse the situation and advise dangote group on the kind of property to invest on. **15marks**

Decision to invest	Good economic condition (#)	Poor economic condition (#)	Turbulent economic condition (#)
Warehouse d_1	50,000	30,000	15,000
Office Building d_2	100,000	40,000	10,000
Apartment Building d_3	30,000	10,000	-20,000
Probabilities	0.5	0.3	0.2

2b. Find the power of set of the following;

    i.   Let $M = \{c,d\}$, then 2^M equal ……..   **2marks**

    ii.   Let $T = \{2,7,9\}$, then 2^T equal ………   **3marks**

3a. BUA sugar refinery has analysed the number of orders placed by each of the 5 departments in the company as follows:

Department

Types of Order	Sales	Purchasing	Production	Account	Maintenance	Total
Consumables	10	12	4	8	4	38
Equipment	1	3	9	1	1	15
Special	0	0	4	1	1	6
Total	11	15	17	10	6	60

An error has been found in one of these orders. What is the probability that the incorrect order:

a) came from maintenance? **3marks**

b) came from production? **3marks**

c) came from maintenance or production? **4marks**

3b. Discuss any five (5) limitations of Linear Programming model **2marks each = 10marks**

4a. Jelfad drug store has 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?

10 marks

4b. Discuss decisions that are made under conditions of uncertainty and certainty. **10marks**

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