



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA
FACULTY OF MANAGEMENT SCIENCES
2022_1 EXAMINATION.

COURSE CODE: BUS800 **CREDIT UNIT: 2**

COURSE TITLE: Quantitative Analysis

TIME ALLOWED: 2Hrs

- INSTRUCTION:**
- 1. Attempt Question 1 and any other 2 questions.**
 - 2. Question number 1 carries 30 marks, while the other 2 questions carry 20 marks each.**
 - 3. Present all your points in coherent and orderly manner.**

1a. The purchasing department of Jelife Hair World has analysed the number of orders placed by each of the 5 departments in the company by type as follows:

Types of Order	Department					Total
	Sales	Purchasing	Production	Account	Maintenance	
Consumables	10	12	4	8	4	38
Equipment	1	3	9	1	1	15
Special	0	0	4	1	2	7
Total	11	15	17	10	7	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? **3marks**
- d) came from neither maintenance nor production? **3marks**

b. Discuss any five limitations for Linear Programming **10marks**

c. Find the equality of sets A & B also set F & G

i. Let $A = \{1, 2, 3, 4\}$ and $B = \{3, 1, 4, 2\}$. **4marks**

ii. Let $F = \{2, 1\}$ and $G = \{1, 2, 2, 1\}$. **4marks**

2a. Discuss decisions that are made under conditions of Uncertainty and certainty. **10marks**

b. Outline five (5) advantages and limitation of simulation mark each @ 10marks

3a. There are seven jobs, each of which has to be processed on machine *A* and then on Machine *B*(order of machining is *AB*). Processing time is given in hour. Find the optimal sequence in which the jobs are to be processed so as to minimize the total time elapsed. **15marks**

JOB	1	2	3	4	5	6	7
MACHINE: A (TIME IN HOURS).	3	12	15	6	10	11	9
MACHINE: B (TIME IN HOURS).	8	10	10	6	12	1	3

b. Explain the following concepts

i. Scheduling **2½marks**

ii. Flow shop **2½marks**

4a. Identify the issues that necessitate maintaining inventory. **10marks**

b. Discuss the different classifications of inventories. **10marks**