NATIONAL OPEN UNIVERSITY OF NIGERIA
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FACULTY OF MANAGEMENT SCIENCES
JULY 2017 EXAMINATION QUESTIONS

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. Differentiate between model and modelling. (**10marks)**

b. List and explain the classification of models by structure. (**10marks)**

c. Find the following equality of sets; A & B; F & G

i. Let A = {1, 2, 3, 4} and B = {3, 1, 4, 2} (**5marks)**

ii. Let F= {2,1} and G ={1,2,2,1} (**5marks)**

2a. A businessman has constructed the payoff matrix below. Using the EMV criterion, analyse the situation and advise the businessman on the kind of property to invest on. (15marks)

Decision to invest	Good economic condition (#)	Poor economic condition (#)	Turbulent economic condition (#)
Apartment Building d_1	50,000	30,000	15,000
Office Building d_2	100,000	40,000	10,000
Warehouse 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 = {a,b}, then 2^M equal …….. (**2marks)**

ii. Let T = {4,7,8}, then 2^T equal …… (**3marks)**

3. The purchasing department of a big company has analysed the number of orders placed by each of the 5 departments in the company by type 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	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? (**5marks)**

b) came from production? (**5marks)**

c) came from maintenance or production? (**5marks)**

d) came from neither maintenance nor production? (**5marks)**

4a. Discuss any five limitations for Linear Programming (**10marks)**

b. 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? **10marks**

5a. Discuss any five (5) decisions that are made under conditions of certainty and Uncertainty. (**10marks)**

b. Outline five (5) advantages and application of simulation. **(10marks)**