NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION

SCHOOL OF MANAGEMENT SCIENCES

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. Let A = {1,3,4}, B = {2,4,8} and C = {3,5,6}. Find

(i) A∪B **2marks**

(ii) A∪C **2marks**

(iii) B∪C **2marks**

(iv) B∪B **2marks**

b. Find the equality of sets A & B

Let A = {1, 2, 3, 4} and B = {3, 1, 4, 2} **7marks**

c. A display of 15 T-shirts in a Sports shop contains three different sizes: small, medium and large. Out of the 15 T-shirts:

3 are small

6 are medium

6 are large.

If two T-shirts are randomly selected from the T-shirts, what is the probability of selecting both a small T-shirt and a large T-shirt, the first not being replaced before the second is selected? **15marks**

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

i. Let M = {a,b}, then 2^M equal …….. **4marks**

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

b. Solve the following Disjoint Sets;

i. Let A = {1,3,7,8} and B = {2,4,7,9}, Then solve A and B **4marks**

ii. Let A be the positive numbers and let B be the negative numbers. Then solve A and B **4marks**

c. Let A = {a, b, c, d} and B= {c, d, e, f}. Then illustrate these sets in a Venn diagram form **4marks**

3a. A wholesaler stocks heavy (2B), medium (HB), fine (2H) and extra fine (3H) pencils which come in packs of 10. Currently in stock are 2 packs of 3H, 14 packs of 2H, 35 packs of HB and 8 packs of 2B. If a pack of pencil is chosen at random for inspection, what is the probability that they are:

(i) not very fine (ii) neither heavy nor medium? **10marks**

b. Explain the theory of probability **10marks**

4a. Explain the requirements 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. Analyze decisions that are made under conditions of certainty and Uncertainty. **10marks**

b. Outline the advantages and application of simulation. **10marks**