NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16, AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS
SCHOOL OF MANAGEMENT SCIENCES
MARCH 2014 EXAMINATION

Course Code: PSM 823   **Credit Units: 2**
Course Title: OPERATIONS RESEARCH AND STATISTICS
Time Allowed: 2 Hours
Instructions:
1. Attempt Question 1 and any other two (2) Questions.
2. Question 1 is compulsory and carries 30 marks while the other 2
Questions carry 20 marks
    each.

1a. Define statistics
1b. Explain how to write a good questionnaire
1c. Distinguish between the following and give two examples of each:
       i.   Numeric and non numeric data
       ii.   Discrete and continous data
       iii.   Ordinal and continous data

2a. Explain tyes of sampling.
2b. In a survey of 50 *PG* students of the Charted Institute of Shipping where the ratio of
     female to male is 10:40, draw a sample of 15 students using stratified sampling method.

3. The number of births recorded in each of the 50 maternity centres, in Surulere Local
     Government in October 2002, is as follows.

Table

50	99	81	86	69	85	93	63	92	65
77	74	76	71	90	74	81	94	67	75
95	81	68	105	99	68	75	75	76	73
79	74	80	69	74	62	74	80	79	68
79	75	75	71	83	75	80	85	81	62

Required

Construct a frequency distribution table using the interval-45-54, 55-64, etc.

4. Discuss the following:
    i.   skewness and kurtosis
    ii.   Axiomatic Probability
    iii.   Permutation and Combination
    iv.   Sample space
    v.   Independent event

5a. What are the Characteristics of a binomial random variable?
5b. List seven (7) typical examples of random variable for which Poisson distribution
    provides good model.
5c. Procedure for Hypothesis Testing.