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**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS**

**SCHOOL OF EDUCATION**

 **MAY/JUNE 2012 EXAMINATION**

EDU 721EDUCATIONAL STATISTICS (3 CR)

TIME ALLOWED: 3 Hours

Instructions: Answer questions number one (1) and any other three (3) questions. Use the answer booklet provided

1a. With the aid of appropriate concept map diagram only, illustrate the relationship between the following

 concepts:

 Variables, Discrete data, Continuous data, Ordinal data, Ratio data, Interval data, Nominal data,

 Parametric and Non-Parametric.

 b. Two examiners are likely to award different scores to an examinee on same question even when the

 teachers use the same marking scheme. The difference is usually attributed to error of measurement.

 State, with atleast one example, the three possible causes of this type of error in educational

 measurement.

 c. Copy and complete the table below:

|  |  |  |
| --- | --- | --- |
| **S/No** | **Characteristics of Sample/Variable** | **Appropriate Test** |
| 1. | (i) | t-test of independent samples |
| 2. | (ii) | t-test of non-indpendent samples |
| 3. | If N is more than 30 for a post test only and randomly sampled objects. | (iii) |
| 4. | (iv) | ANOVA |
| 5. | If two or more independent variables are involved | (v) |
| 6. | If pretest, post-test design | (vi) |
| 7. | If more than two groups are involved in a pretest, post-test, with two or more variables | (vii) |
| 8. | (viii) | Chi-square |

1d. What is a variable? Give atleast one example of a variable.

 (25 marks)

2. The table below shows the frequency distribution of students offering some subjects in May/June 2012

 Semester Examination in NOUN. Complete the table and use it to construct a pie chart.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Subject | Maths | English | Physics | Chemistry | Geography | Agric | Biology | Total |
| Frequency | 15 | 30 | 90 | 45 | 150 | 108 | 102 |  |
| Degree |  |  |  |  |  |  |  |  |

 (15 marks)

3a. A farmer hired the services of two labourers to help him in his farm. What is the probability that the first

 labourer is a male and the second a female?

b(i). Describe a decision diagram.

 (ii). Identify the major disadvantage of using a decision diagram in determining probability.

 (15 marks)

4a. Define the following terms as used in Probability.

1. Heads
2. Outcome
3. Tail

 b. Given that a coin was tossed 4 times, use a table to show the outcomes.

 (15 marks)

5. Write short notes on any five of the following concepts. Give a good example in each case.

 a. Quantitative variables

 b. Qualitative variables

 c. Independent variables

 d. Dependent variables

 e. Discrete variables

 f. Continuous variables

 (15 marks)