**DEPARTMENT OF GEOGRAPHY**
**SCHOOL OF SCIENCE AND SCIENCE EDUCATION**
**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**
**First Semester Examination, 2011/2012**

**COURSE CODE: GRY 313**

**COURSE TITTLE: Quantitative Statistics**

**Instruction:** Answer question 1 and any other 3 Questions
**Time:** **2hrs**

1. You have written a computer programme to generate random number in the range 0 to 9. The programme was successfully run to produce 500 digits and the following distribution of the digits resulted:

| Digit | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Observed Frequency | 40 | 36 | 28 | 62 | 58 | 60 | 34 | 70 | 40 | 2 |

Alpha level = 0.05 at (df) 9 = 16.92

Are you satisfied that your method of generating random number is satisfactory?

2. A geographer came up with the following measurements after a field survey of an observed spatial distribution pattern with an area of 30cm$^2$.

| | | | |
|---|---|---|---|
| 0.12 | 0.72 | 1.67 | 2.11 |
| 0.8 | 0.92 | 0.88 | 1.41 |
| 0.6 | 0.47 | 0.14 | 0.21 |

Using nearest neighbor analysis technique:

(a) Calculate Rn using the above data

(b) Using the result obtained in (a), explain the interpretation of the spatial patterns

3.a. Define quantitative research

b. List and explain the objectives of quantitative research

c. Using specific examples, differentiate between parametric and non-parametric tests

4.a. Explain what you understand by sampling

b. Using concrete examples, differentiate between population and sampling

c. Discuss why sample is often preferred to the entire population

5. Write short notes on each of the following:

   a. Primary and secondary data

   b. Discrete and continuous data

   c. Quantitative and qualitative data

6. A university research student became interested in finding out the effect of motivation on students' performance in Geography.

   a. State the null and alternative hypotheses which can guide the study;

   b. State the two hypotheses in (6a) above in symbolical forms;

   c. Indicate whether you are going to use either one-tailed test or two-tailed test for your hypothesis testing. Give reasons for your answer.

   d. Use the normal curve to indicate the critical region for testing your null hypothesis at .05 level of significance.