CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

**FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELORS OF EDUCATION (ARTS)**

GEOG 146: INTRODUCTION TO STATISTICAL TECHNIQUES IN GEOGRAPHY

STREAMS: **TIME: 2 HOURS**

DAY/DATE: FRIDAY 13/04/2018   **11.30 A.M - 1.30 P.M.**

INSTRUCTIONS:

- **Answer Question ONE (COMPULSORY) and any other TWO Questions.**

1. Explain the meaning of the following concepts used in statistics;
   (a) Skewness   [5 Marks]
   (b) Kurtosis   [5 Marks]
   (c) Mutually exclusive events   [5 Marks]
   (d) Population   [5 Marks]
   (e) Sample   [5 Marks]
   (f) Probability   [5 Marks]

2. (a) Explain the role of statistics ion geographical studies.   [10 Marks]
   (b) Discuss the scales/levels of measurement.   [10 Marks]

3. (a) A brick manufacturer is interested in the number of defective bricks churned out of his kiln due to overheating. Similar kilns worldwide are known to have about 0.4 of all bricks overheated during the brick manufacturing process. He selects ten randomly sampled bricks for investigation. Compare the probability that 4 bricks out of those ten are overheated.
                                                                       [8 Marks]

   (b) Compare the array of probabilities hat 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 bricks will be overheated from a random sample of 10 bricks.   [12 Marks]

4. A group of 1000 students who sat for the paper COMS 100 at Chuka University last year had a mean mark of 50 and a standard deviation of 4. Assuming a normal distribution for these COMS scores find;
   (a) The number of students who scored a mark between 46% and 54%.   [10 Marks]
   (b) The number of students who scored a mark below 54%.   [5 Marks]
   (c) If the pass mark was 40%, how many students failed?   [5 Marks]

5. (a) Depict a positively skewed distribution graphically.   [2 Marks]

    (b) The data below shows rainfall data (in mm) recorded in 26 stations in Kenya in the month of June 2017.

    84,   77,   89,   77,   88,   81,   67,   74,   78,   94,   76,
    77,   90,   28,   72,   93,   80,   94,   81,   58,   93,   56,
     66,   79,   89,   77

    Use the data to calculate the following
        (i) The mean.   [4 Marks]
        (ii) The median.   [2 Marks]
        (iii)The mode.   [2 Marks]
        (iv)The range.   [2 Marks]
        (v) The standard deviation.   [8 Marks]
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