BOWEN UNIVERSITY
COLLEGE OF SOCIAL AND MANAGEMENT SCIENCES
ECONOMICS PROGRAMME
B.Sc. DEGREE EXAMINATION 2020/2021 ACADEMIC SESSION
FIRST SEMESTER EXAMINATION

Course Title: Introductory Statistics   **Course credit: 2**
Course code: ECN 105   **Time Allowed: 2 hours**   **Date: 20, April 2021**
Instruction: Provide your answers clearly and show your workings step by step.

Section A: You are required to attempt all questions in this section. Each question award 1 mark

1. The range of a sample gives an indication of the
   a. way in which the values cluster about a particular point
   b. number of observations bearing the same value
   c. maximum variation in the sample
   d. degree to which the mean value differs from its expected value

2. The observation which occurs most frequently in a sample is the
   ....
   a.   Median   b. Mean deviation   c. Standard deviation d. mode

3. In this expression $\sum_{k=1}^{4} 3k - 1$, which is the index of summation?
   a. 3   b. 1   c. K   d. 4

4. Upper quartile is the lowest value of
   a.   Lowest 25%   b. lowest 50%   c. top 25%   d. top 75%

5. Poor precision in scientific measurement may arise from
   a.   The standard being too strict
   b.   Human error
   c.   Limitations of the measuring instrument
   d.   Both human error and the limitations of the measuring instrument

6.   Decile refers to division of series into
   a.   Two parts   b. Four parts   c. Ten parts   d. Hundred parts

7. The other name for measure of central tendency is called
   a.   Average   b. Collection of data   c. Summation d. Regression

8. Arrangement of data in the given series is required while computing
   a.   Mean   b. Median   c. Mode   d. Percentile

9. Lower limit of first group and upper limit of last group are undefined in an
   a. Open-ended classes b. close-end classes c. inclusive d. exclusive

10. Systematic errors lead to a lack of
    a. Accuracy in measurement
    b. Significant digits in the measurement
    c. Precision in the measurement
    d. Gradation of the measuring instrument

11. Why might a researcher use a sample rather than an entire population for their study?
    a. Using a sample is more accurate than using an entire population.

    b. Using a sample is more practical than using an entire population.

    c. Using a sample is more respected than using an entire population.

    d. Using a sample is more complicated than using an entire population.

12. The accepted value is 15.63. Which of the following correctly describes this student experimental data? Trials 1: measurement 12.92; Trial 2: measurement 13.00; Trial 3: measurement 12.96.
    a. Accurate but not precise
    b. Precise but not accurate
    c. Both precise and accurate
    d. Neither accurate nor precise

13. The accepted value is 1.43. Which of the following correctly describes this student experimental data? Trial 1: measurement 1.92; Trial 2: measurement 0.88; Trial 3: measurement 1.29.
    a. Accurate but not precise
    b. Precise but not accurate
    c. Both precise and accurate
    d. Neither accurate nor precise

14. A reaction takes place that is expected to yield 171.9g of product, but only yields 154.8g. What is the relative error for this experiment?   ....

15. What is the median of the sample 5, 5, 11, 9, 8, 5, 8? ....
16. The two branches of statistics are .... and ....
17. .... is a form that contains a set of questions intended to provide answers to part or the main data required of a researcher.
18. A scale of measurement that categorises items is known as ....
19. Statistics is defined as ....
20. The difference between a set of measurement obtained from the actual value and the estimated value ....
21. A discrete variable is a variable whose value is obtained by ....while the value of a continuous variable is obtained by............................

22. The point that represents the halfway or diving point between successive classes is called
....

23. Evaluate the following sum

$$\sum_{k=1}^{4} 3k - 1$$

24. $$\sum_{m=1}^{4} 8k - 6m$$

25. $$\sum_{l=3}^{8} 3l + 5$$

Section B: Answer any three questions [45 marks @ 15marks each]

1. The table below shows the frequency distribution of monthly expenditure on feeding for some selected household.

Expenditure on feeding ($)	No of households
15-19	12
20-24	15
25-29	24
30-34	15
35-39	24
40-44	18
45-49	12

You are required to compute the class mark, class boundary, cumulative frequency of the distribution, relative frequency and the relative cumulative frequency.

2. i. Clearly distinguish between
   a. Accuracy and precision
   b. Inaccuracy and Imprecision

   ii. Explain the following component of a frequency distribution
   a. Class interval
   b. Class limit
   c. Class size
   d. Class boundary
   e. Relative cumulative frequency

3. The table below represents the number of apples plucked by a number of students. Use the data below to answer the following questions.

No. of apples	1	2	3	4	5
Frequency	12	10	8	14	6

   a. Draw a histogram and the frequency polygon
   b. Work out the mean, median and the mode
   c. Write out the formula for computing variance and standard deviation.

4. Give a detailed distinction of the following
   a. Sample and Population
   b. Statistic and Parameter
   c. Descriptive and Inferential Statistics
   d. Qualitative and Quantitative variable
   e. Variable and constant