

NOVEMBER 2023
EBS 348
EDUCATIONAL STATISTICS
30 MINUTES

Candidate's Index Number
Signature:

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
SCHOOL OF EDUCATIONAL DEVELOPMENT AND OUTREACH
INSTITUTE OF EDUCATION

COLLEGES OF EDUCATION
FOUR-YEAR BACHELOR OF EDUCATION (B.ED)
THIRD YEAR, SECOND SEMESTER MID-SEMESTER QUIZ, NOVEMBER 2023

24TH NOVEMBER 2023

EDUCATIONAL STATISTICS

8:00 AM – 8:30 AM

Answer **ALL** the questions.
(20 MARKS)

For items 1 to 16, each stem is followed by four options lettered A to D. Read each item carefully and circle the letter of the correct or best option.

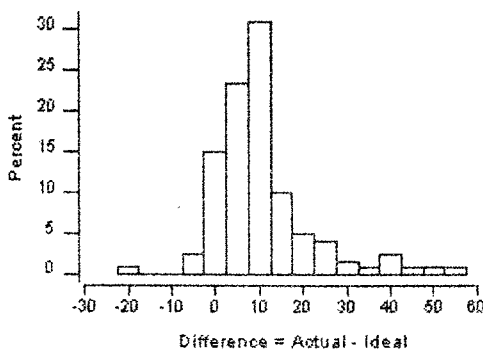
- Which one of the following measures of central tendency is **most appropriate** for a negatively skewed distribution?
 - Mean
 - Median
 - Mode
 - Range
- The arithmetic mean of a set of 20 numbers is 10. If each number is first multiplied by 5 and then increased by 2, then what is the mean of the new numbers?
 - 17
 - 27
 - 50
 - 52
- At a college, students' GPAs are normally distributed with a mean score of 50 and a standard deviation of 2. Find the median of the scores.
 - 25
 - 48
 - 50
 - 52
- Which of the following diagrams is **most appropriate** for representing data that is collected over a period graphically?
 - Bar graph
 - Histogram
 - Line graph
 - Pie chart

5. The modal score of the BS5 learners' mathematics test was 64, with a mean of 80. Which of these interpretations is correct?
- A score of 61 is slightly below the average score of the class.
 - A score of 69 is the highest in the class.
 - More learners received a score of 64 than any other score.
 - No learner scored less than 80 and more than 64.
6. If a teacher adds all the marks of learners in a class test by five, then the new standard deviation would be the old standard deviation
- decreased by five.
 - divided by five.
 - increased by five.
 - plus or minus zero (i.e. remain same).
7. The mean of 9 observations is 16. One more observation is included, and the new mean becomes 17. The 10th observation is
- 7
 - 18
 - 26
 - 30
8. What is the mean of the following numbers: **23, 45, 87, 40, 50**?
- 34
 - 49
 - 56
 - None of the above
9. Which of the following statements is **correct**? The
- inter-quartile range is found by taking the difference between the first and third quartiles and dividing that value by 2.
 - range is found by taking the difference between the largest and smallest values and dividing by 2.
 - standard deviation is expressed in terms of the original units of measurement, but the variance is not.
 - value of the standard deviation may be positive or negative, but the value of the variance will always be positive.
10. For a negatively skewed distribution with a single mode, the
- Mean < median \leq mode
 - Mean = median = mode
 - Mean = median but one is unable to tell where the mode would lie.
 - Mean > median \geq mode
11. Mark was at the 60th percentile in an examination. His actual score in the examination was 55. This means that Mark performed *better* than of the students in the class.
- 40%
 - 45%
 - 55%
 - 60%

12. A restaurant conducts a survey to determine the quality of its service. Customers were asked to rate their service as either very poor, poor, average, good, or excellent. The most appropriate measure of a central location for this data set is
- coefficient of variation.
 - mean.
 - median.
 - standard deviation.
13. Given a positively skewed distribution with a median of 10 and a mode of 8. Which of the following is **not** a possible value for the mean?
- 6
 - 11
 - 12
 - 18
14. Which of the following would indicate that a dataset is **not** bell-shaped?
- The mean is much smaller than the median.
 - The range is equal to 5 standard deviations.
 - The range is larger than the interquartile range.
 - There are no outliers.

Use the information below to answer questions 15 and 16.

The following histogram shows the distribution of the difference between the actual and “ideal” weights for 119 female students. Notice that percent is given on the vertical axis. Ideal weights are responses to the question “What is your ideal weight”? The difference = actual – ideal. (*Source*: ideal women dataset on CD.)



15. What is the approximate shape of the distribution?
- Bimodal (has more than one peak).
 - Nearly symmetric.
 - Skewed to the left.
 - Skewed to the right.
16. Most of the women in this sample felt that their actual weight was weight.
- about the same as their ideal
 - greater than their ideal
 - less than their ideal
 - no more than 2 pounds different from their ideal

For item 17, write the appropriate responses in the spaces provided.

17. Identify the scale of measurement for the following:

- a. Eye colour of each student.

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- b. A car magazine lists the most expensive cars for 2017.

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- c. The roster of a basketball team lists the jersey numbers for each of the players.

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- d. List of popular video games.

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