

AUGUST 2021
EDS 348
EDUCATIONAL STATISTICS
1 HOUR, 45 MINUTES

Candidate's Index Number:

Signature:

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

FOUR-SEMESTER BACHELOR OF EDUCATION PROGRAMME
THIRD YEAR, END-OF-SECOND SEMESTER EXAMINATION, AUGUST, 2021

AUGUST 16, 2021

EDUCATIONAL STATISTICS

9:00 AM – 9:30 AM

This paper consists of two sections, A and B. Answer ALL the questions in Section A and ALL questions from Section B. Section A will be collected after the first 30 minutes.

SECTION A

Answer ALL the questions in this Section.

Items 1 to 20 are stems 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 variables can be classified as ordered?
 - Age of students.
 - Course students pursue.
 - Hall of residence.
 - University attended.
- The Registrar of the University of Ghana wants a pictorial representation of the enrolment in a programme offered at the College of Education. Which of the following graphs would be the **most appropriate** for him to use?
 - Bar graph
 - Frequency polygon
 - Histogram
 - Ogive
- Which one of the following variables would provide values in the interval scale?
 - Height of students in a Hall of residence.
 - Number of students in Class One.
 - Scores in the end-of-semester examination.
 - Types of cars University lecturers own.
- One strength of the mean as a measure of location is that it
 - can be used for incomplete data.
 - is not affected by extreme scores.
 - is sensitive to changes in scores.
 - uses all the information in a set of data.

5. Which of the following variables can be classified as a continuous variable?
- Parents' occupation.
 - Political affiliation.
 - Region of birth.
 - Statistics achievement.

6. The first quartile in the following distribution is
- | | | | | | | | |
|---|---|----|----|----|----|----|----|
| 7 | 5 | 13 | 28 | 32 | 15 | 22 | 30 |
|---|---|----|----|----|----|----|----|
- 7
 - 10
 - 28
 - 29

7. The following scores were available for 9 students in a Statistics class.
- | | | | | | | | | |
|----|----|----|----|----|----|---|----|----|
| 22 | 12 | 13 | 16 | 10 | 20 | 8 | 17 | 18 |
|----|----|----|----|----|----|---|----|----|
- The score for the 10th student was missing but it was known to be the lowest score. What would be the median for the distribution?
- 13
 - 14
 - 15
 - It cannot be determined

8. One weakness of line graphs as a pictorial representation of data is that
- extreme values distort comparisons.
 - they are difficult to construct.
 - they are effective with ratio scales.
 - values can be read from the graph.

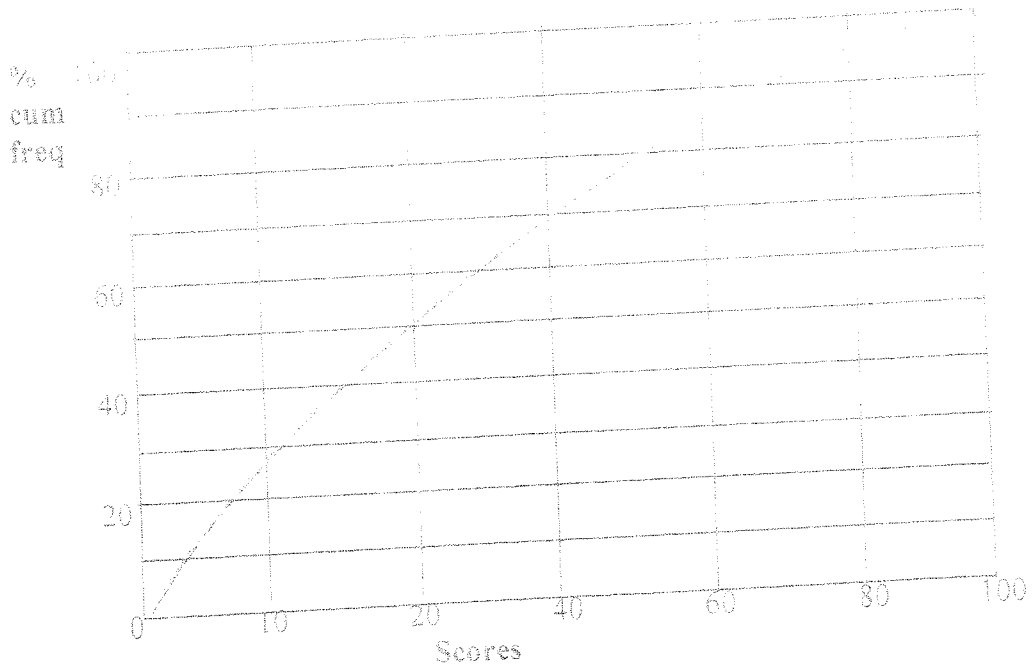
9. The mode of a normal distribution was 35. One student whose score was missing had 36. The found score was added to the distribution. What would be the mean?
- 35
 - 36
 - 55.5
 - More information is needed.

10. The mean score obtained by 40 students in a statistics quiz was 55. It was found later that a student who obtained 50 actually had 65. How would the discovery affect the mean?
- More information is needed.
 - The new mean is greater than the old mean.
 - The old mean is greater than the new mean.
 - There is no change in the old mean.

11. In an end-of-semester examination, a mean of 58 was obtained by a statistics class. The median score was 52. The performance of the class can be said to be
- bimodal
 - normally distributed.
 - skewed to the left.
 - skewed to the right.

12. The standard deviation of a distribution is 16. What is the corresponding variance of the distribution?
- 4
 - 32
 - 160
 - 256
13. What is the range in the following distribution?
- 16 8 27 4 -6 18 20 14 12 21
- 10
 - 21
 - 23
 - 33
14. The first quartile (Q_1) in a distribution of scores is 15. The third quartile (Q_3) is 45. What is the value of the quartile deviation?
- 10
 - 15
 - 25
 - 30
15. A study shows that the number of hours studied explained 64% of the variation in examination scores among the students who participated in the study. What is the correlation coefficient between hours studied and exam scores?
- 0.64
 - 0.80
 - 0.36
 - Cannot be determined
16. The correlation between attendance and academic performance has been found to be 0.81 in a research study. The result of the study implies that a person with a
- high score in attendance is more likely to obtain moderate score in academic performance.
 - low score in attendance is more likely to score high in academic performance.
 - low score in attendance is more likely to score low in academic performance.
 - moderate score in attendance is more likely to score low in academic performance score.
17. The percent of total variation of the dependent variable Y explained by the set of independent variables X is measured by
- coefficient of correlation
 - coefficient of skewness.
 - coefficient of determination.
 - standard error of estimate.
18. The relationship between effort regulation and academic performance was found to be 0.7 among a group of students in a school? About what percent of variation in academic achievement of the students is explained by effort regulation?
- 14%
 - 30%
 - 49%
 - 70%

Use the percentage cumulative frequency curve below to answer questions 19-20



19. Ali obtained a score of 60. His percentile rank is approximately
- A. 30
 B. 40
 C. 60
 D. 85
20. If Yanke's score was ranked at the 90th percentile, what was his actual score?
- A. 28
 B. 68
 C. 90
 D. 98

For items 21 to 24, write the appropriate responses in the spaces provided.

21. State two reasons for studying Educational Statistics.

(2 marks)

- i.

- ii.

22. In a distribution, $\sum fx$ is given as 4335 and the mean is 72.25. What is the value of the $\sum f^2$ (2marks)

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