



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF HEALTH AND PSYCHOLOGY
ADVANCED DIPLOMA IN MENTAL HEALTH PRACTICE
END OF JANUARY-APRIL 2023 SEMESTER EXAMINATIONS

Course Code: ADMH101
Course Title: Biostatistics
Time: 2 Hours: 4:00 p.m. to 6:00 p.m.
Date: Wednesday, 13th April 2023

Instructions

- 1) Do not write on this question paper
- 2) This exam is marked out of 60 marks
- 3) This Examination comprises Sections A and B
- 4) Late submission of the answers will not be accepted
- 5) No movement is allowed during the examination
- 6) All questions are compulsory

SECTION B: MULTIPLE CHOICE QUESTIONS (20 MARKS)

- 1) An example of inferential statistics is:
 - a) Median
 - b) Variance
 - c) Hypothesis
 - d) Mean

2. A statement that is always opposite to the null hypothesis is:
 - a) Alternate hypothesis
 - b) Null hypothesis
 - c) Inferential statistics
 - d) Correlation

3. The *p value* is a number is
 - a) calculated from a statistical test, that describes how likely you are to have found a particular set of observations if the null hypothesis were true.
 - b) Thought to describe how unlikely you are to have found a particular set of observations if the null hypothesis were true.
 - c) Thought to describe how unlikely you are to have found a particular set of observations if the alternative hypothesis were true.
 - d) calculated from a statistical test, that describes how likely you are to have found a particular set of observations if the alternative hypothesis were true.

4. Calculate the mean of the distribution:
 $X = 5, 7, 8, 9, 10, 12, 15, 16$
 - a) 12
 - b) 10.25
 - c) 13
 - d) 16

5. An example of a measure of central tendency is:
 - a) Hypothesis
 - b) Range
 - c) Standard deviation
 - d) Median

- 6 Calculate the median of the distribution is:
 $X: 102, 100, 98, 99, 95, 96$
 - a) 97
 - b) 99
 - c) 100
 - d) 98

7. Calculate the standard deviation for the following data set. X:5,7,8,9,10,12

- a) 3
- b) 2.43
- c) 4
- d) 5.1

8. _____ is not a method of presenting data.

- a) Sample
- b) Pie chart
- c) Histogram
- d) Bar graph

9. _____ is not a measure of dispersion

- a) Interquartile range
- b) Mode
- c) Standard deviation
- d) Range

10. Calculate the range for the distribution: X:6,8,9,10,12,14

- a) 12
- b) 10
- c) 7
- d) 6

11. Calculate the variance of the distribution. X: 6,7,8,9,10,12,13,14

- a) 7.73
- b) 7.53
- c) 5.2
- d) 6.76

12. The depicted sign for the left tail test is:

- a) =
- b) >
- c) <
- d) ≠

13. _____ is not a qualitative data analysis method.
- a) Content
 - b) Phenomenon
 - c) Narrative
 - d) Sample
14. Calculate the median of the following distribution: X: 5,7,9,10,12,14,15
- a) 10
 - b) 11
 - c) 12.1
 - d) 10.28
15. The most frequent occurring number in the distribution is described as:
- a) Mean
 - b) Mode
 - c) Median
 - d) Standard deviation
16. A strong negative relationship between two variables is depicted as:
- a) 2
 - b) -1
 - c) 1
 - d) -2
17. Statistics used to make predictions of a population is described as:
- a) Descriptive
 - b) Inferential
 - c) Qualitative
 - d) Quantitative
18. Statistics used to describe data is referred to as:
- a) Inferential
 - b) Current
 - c) Qualitative
 - d) Descriptive

19. Compute the standard deviation of the distribution. X: 3,5,7,8,10,12,14,15

- a) 2.85
- b) 3.85
- c) 4.85
- d) 3.00

20 Calculate the range of the following data set. X: 2,3,5,7,8,10,11

- a) 5
- b) 7
- c) 9
- d) 11

SECTION B: LONG EASY QUESTIONS (40 MARKS)

21.

a) Outline five qualitative data analysis methods (5 Marks)

b) For this distribution X:5,6,7,9,9,10,12,14,15,16

- i) Calculate the mode. (1 marks)
- ii) Compute the variance. (7 marks)
- iii) Calculate the standard deviation. (7marks)

22.

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|---|---|---|---|----|----|
| X | 2 | 3 | 5 | 9 | 12 |
| Y | 4 | 6 | 7 | 13 | 15 |

- i) Define regression. (5 marks)
- ii) For the distribution above calculate the slope of regression. (5marks)
- iii) Line of regression function. (5marks)
- iv) Intercept of regression line. (5 marks)