

Examrace

Statistics MCQs-Data and Graphical Descriptive Statistics Part 2

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21. A population value or characteristic that is of interest to us and that we would like to estimate is called:

- a. a hypothesis
- b. a statistic
- c. a population
- d. inferential statistics
- e. a parameter

Answer: E

22. You asked ten of your friends who are at UCT about their weight. On the basis of this information, you stated that the average weight of all students at UCT is 69kg. The conclusion that 69kg is the average weight of all UCT students is an example of:

- a. descriptive statistics
- b. inferential statistics
- c. a parameter
- d. a population
- e. None of the above

Answer: B

23. A summary measure that is computed from a sample to describe a characteristic of the population is called

- a. a parameter
- b. a statistic
- c. a population
- d. inferential statistics
- e. None of the above

Answer: B

24. Which of the following is not the goal of descriptive statistics?

- a. Summarizing data
- b. Displaying aspects of the collected data
- c. Reporting numerical findings
- d. Estimating characteristics of the population
- e. None of the above

Answer: D

25. What is statistical inference?

- a. The process of drawing conclusions about a sample based on population data
- b. The process of drawing conclusions about a statistic based on a parameter
- c. The process of drawing conclusions about a population based on a parameter
- d. The process of drawing conclusions about a population based on sample data
- e. None of the above

Answer: D

26. The following ages are those of 15 people interviewed at the Ster-Kinekor movie theatres in Canal Walk shopping centre: 12, 14, 15, 19, 19, 21, 27, 31, 32, 46, 53, 56, 57, 58, 59. Describe the shape of a stem and leaf plot of the data.

- a. Unimodal and skewed to the right
- b. Symmetrical
- c. Unimodal and skewed to the left
- d. Bimodal
- e. None of the above

Answer: D

27. If you have data on the yearly average temperature at Cape Town International Airport from 1900 to 2000, and if you are particularly interested in change over time, what is the most effective graphical display?

- a. histogram
- b. scatter plot
- c. ogive

- d. pie chart
- e. line chart

Answer: E

28. If you suspect that a population is made up of two subpopulations, for example males and females, with different values for a certain continuous variable, which of the following would you use to visually check for such a possible difference?

- a. the median of a histogram
- b. the skewness of the histogram
- c. the modes of a line chart
- d. the modes of a histogram
- e. None of the above

Answer: D

29. If you have data on house prices and the distance of each of those houses from the city centre, and you are curious whether there is an association between distance from the city centre and the price of the house, with which of the following graphical techniques could you most easily see whether there is indeed such a relationship?

- a. two histograms, one of house prices and one of distance from city centre
- b. a scatter diagram
- c. a bar graph with distance on the x-axis and price on the y-axis
- d. a bimodal histogram
- e. None of the above

Answer: B

30. The following values are the number of ice-creams sold by an ice-cream vendor on campus per day over a two-week period (the values have been sorted) : 13, 14, 17, 17, 24, 26, 28, 29, 29, 31, 32, 38,45, 57. The distribution of ice-cream sales can be described as:

- a. bi-modal and positively skewed
- b. uni-modal and negatively skewed
- c. bi-modal and negatively skewed
- d. uni-modal and positively skewed

Answer: D

31. The following values are the number of people buying laptop computers from a particular electronics shop per day over a two-week period (the values have been sorted) : 13, 14, 17, 17, 24, 26, 28, 29, 29, 31, 32, 38, 45, 57. The distribution of ice-cream sales can be described as:

- a. bi-modal and positively skewed
- b. uni-modal and negatively skewed
- c. bi-modal and negatively skewed
- d. uni-modal and positively skewed
- e. None of the above

Answer: D

32. It has been claimed that Vodacom has the highest market share amongst cellphone users in South Africa. A random sample of 250 cellphone users were asked which network they subscribe to. What type of data has been collected and which graphical technique would be the most appropriate to highlight the various market shares, amongst those listed below?

- a. Quantitative data to be represented in a pie chart
- b. Qualitative data to be represented in a histogram
- c. Quantitative data to be represented in a bar chart
- d. Qualitative data to be represented in a pie chart

Answer: D

33. It has been claimed that BCom students make up the largest group of students from a single degree programme amongst all students taking the STA100S course. You wish to investigate this and ask 1200 STA100S students which degree they are currently registered for. What type of data have you collected and how could this be best represented, given the options below?

- a. Qualitative data to be represented in a pie chart
- b. Qualitative data to be represented in a histogram
- c. Quantitative data to be represented in a bar chart
- d. Quantitative data to be represented in a pie chart
- e. None of the above

Answer: A

34. A stem and leaf display describes two-digit integers between 20 and 80. For one of the classes displayed, the row appears as 3|2 6 8. What numeric values are being described?

- a. 32,36 and 38
- b. 23,63 and 83
- c. 3.2,3.6 and 3.8
- d. 32,36 and 37
- e. None of the above

Answer: A

35. A stem-and-leaf display describes two-digit integers between 20 and 80. For one of the classes displayed, the row appears as 5|246. What numerical values are being described?

- a. 25,45, and 65
- b. 60,50, 40, and 20
- c. 52,54, and 56
- d. 46 and 52
- e. None of the above

Answer: C

36. The graphical representation of a cumulative relative frequency distribution is called?

- a. Histogram
- b. Pie chart
- c. Stem and leaf plot
- d. Box and whisker plot
- e. None of the above

Answer: E

37. All 616 members of a sports club in Cape Town were contacted via email and asked whether they thought that Karate should be added to the list of sports currently offered by the club. 146 members said yes, 91 said no, 58 said that they were not sure and 321 did not respond. To represent this information graphically, we could use a:

- a. histogram
- b. box and whisker plot
- c. bar graph
- d. stem and leaf plot

e. None of the above

Answer: C

38. A histogram is a graphical representation of which of the following:

- a. An ogive
- b. A frequency distribution
- c. A cumulative relative frequency distribution
- d. A stem and leaf plot
- e. None of the above

Answer: B

39. Which of the following statements is false?

- a. Ranked/ordinal data is most effectively presented with pie charts.
- b. If a histogram is positively skewed, the mean is larger than the median.
- c. An advantage of stem and leaf displays is that the values of the original observations are shown.
- d. A histogram can have more than one mode.
- e. None of the above

Answer: A

40. Which of the following is *not* found in a frequency distribution?

- a. Class limits
- b. Class intervals
- c. Individual observations within each class
- d. All of the above are found in a frequency distribution.
- e. None of the above are found in a frequency distribution

Answer: C

41. A frequency distribution is a (n) :

- a. table of the individual observations collected from a sample.
- b. individual listing of the random values found in a data set.
- c. listing of the individual observations arranged in ascending or descending order.

- d. table, which classifies the number of data values into classes with counts of the number of data values that fall into each of the classes.
- e. None of the above

Answer: D

42. The stem-and-leaf display:

- a. reveals far more information relative to individual values than does the histogram.
- b. allows the median to be easily identified.
- c. does not allow the original data values to be identified
- d. both A and B are correct
- e. None of the above are correct

Answer: D

43. The difference between a histogram and a bar chart is that:

- a. the histogram reflects qualitative data while the bar chart represents quantitative data.
- b. the adjacent rectangles/bars in a histogram have a gap while those for a bar chart do not.
- c. the histogram reflects both qualitative and quantitative data while the bar chart represents only qualitative data.
- d. the adjacent rectangles/bars in a bar chart have a gap while those for a histogram do not.
- e. None of the above

Answer: D

44. The two graphical techniques that can be used to represent nominal data are:

- a. bar chart and histogram
- b. pie chart and ogive
- c. bar chart and pie chart
- d. histogram and ogive
- e. None of the above

Answer: C

45. A certain company employs a large number of people earning rather average salaries (compared with employees of this kind across South Africa) and a few senior managers

who earn very large salaries. What is a histogram of salaries for this company likely to look like?

- a. positively skewed
- b. negatively skewed
- c. bimodal
- d. symmetrical
- e. we would need more information to be able to answer this question

Answer: A

46. A certain company employs a large number of senior managers earning very high salaries (compared with employees of this kind across South Africa) and a few others who earn comparatively small salaries. What is a histogram of salaries for this company likely to look like?

- a. positively skewed
- b. negatively skewed
- c. symmetrical
- d. bimodal
- e. we would need more information to be able to answer this question

Answer: B

47. Which of the following sampling techniques are considered to be random if we were trying to estimate the average IQ of UCT students using a sample of 500 students?

- a. Place each registered student's name in a hat, shuffle it and draw out 500 names
- b. Randomly choose 500 students from the dean's merit list
- c. Sit on Jameson stairs during 1st period and interview the first 500 students you meet
- d. Interview 500 students after a STA100S class
- e. None of the above

Answer: A

48. Which of the following sampling techniques are considered to be random if we were trying to estimate the average number of CD's owned by STA100S students?

- a. Randomly select students from the Dean's Merit list who are also STA100S students
- b. Place a survey on the STA100S WebCT site over a two-day period

- c. Take the entire STA100S class list and get a computer package like Excel to randomly select 200 names for you to contact and interview
- d. Interview 200 students after a third period STA100S class
- e. None of the above

Answer: C

49. In rating the service provided by a waiter/waitress, the following responses are possible: excellent, above average, average, below average, and poor. The responses are coded from 1 to 5 with 5 being excellent. These observations are on the:

- a. nominal scale
- b. ordinal scale
- c. interval scale
- d. ratio scale
- e. None of the above

Answer: B

50. Robert Arthur is registered for a BBusSc degree with code: Combo3. Shara Kumar is registered for a BCom degree with code: Combo6. These observations are on the:

- a. descriptive scale
- b. nominal scale
- c. ordinal scale
- d. interval scale
- e. None of the above

Answer: B

51. You ask five of your classmates about their height. On the basis of this information you conclude that the average height of all UCT students is 170 cm. This is an example of:

- a. descriptive statistics
- b. statistical inference
- c. a parameter
- d. a population
- e. None of the above

Answer: B

52. Which of the following statements is false?

- a. A frequency distribution counts the number of observations in each of a series of classes that cover the complete range of the observations.
- b. The classes in a frequency distribution should overlap to ensure that each observation belongs to at least one class.
- c. The frequency distribution is often graphically represented in the form of a histogram.
- d. The number of classes we should use in a frequency distribution is related to the number of observations in our data set.

Answer: B

53. The relative frequency for a class in a frequency distribution is calculated by:

- a. dividing the frequency of the class by the number of classes
- b. dividing the frequency of the class by the class width
- c. dividing the frequency of the class by the total number of observations in the data set
- d. subtracting the lower limit of the class from the upper limit and multiplying the difference by the number of classes

Answer: C

54. The sum of the relative frequencies for all classes in a frequency distribution will always equal

- a. the number of classes
- b. the class width
- c. the total number of observations in the data set
- d. the largest observation in the data set
- e. one

Answer: E

55. Consider these three variables: (i) whether you are a SA citizen (ii) your marital status (iii) the time it took you to get to UCT this morning. In the order given, these variables are:

- a. nominal, interval, interval
- b. interval, interval, nominal
- c. nominal, interval, nominal
- d. nominal, nominal, interval

e. nominal, nominal, nominal

Answer: D

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