King Abdulaziz University **Faculty of Sciences** **Statistics Department**	**Exam # 1** **STAT 110**	**First Term** **1429-1430H**	60

Name: **ID No:** **Section:**

You have 60 questions in 7 pages. You have 120 minutes to solve the exam. Please mark all your answers on the answer sheet provided to you. You can use your question paper to solve problems but only answer sheets will be graded. You have to submit both questions paper and answer sheet. Good luck

Choose the best answer from the following questions:

1. The number of people from the state of Alaska (ولاية الاسكا) who voted for a Republican (جمهورى) in the last election (انتخاب) is an example of the ……. level of measurement.
   A) nominal B) ordinal C) interval D) ratio

2. What type of sampling is being used if every 100th hamburger manufactured is checked to determine its fat content.
   A) random sampling C) convenience sampling
   B) systematic sampling D) cluster sampling

3. "Based on Mrs. Smith's electric bill(فاتورة كهرباء) for last year she expects that she will be paying $75 for each month in this year". Which branch of statistics used in above statement?
   A) predictive statistics C) inferential statistics
   B) descriptive statistics D) differential statistics

4. For the class 7 - 19, the upper class limit is
   A) 12 B) 7 C) 19 D) 19.5

5. Ahmed wants to construct a frequency distribution for the major field of college students. What type of distribution should he use?
   A) ungrouped B) grouped C) categorical D) cumulative

6. The symbols used to represent the sample variance is :
   A) S B) σ C) S^2 D) σ^2

7. A researcher randomly selects and interviews fifty male and fifty female teachers. What type of sampling is used?
   A) random sampling C) stratified sampling
   B) systematic sampling D) cluster sampling

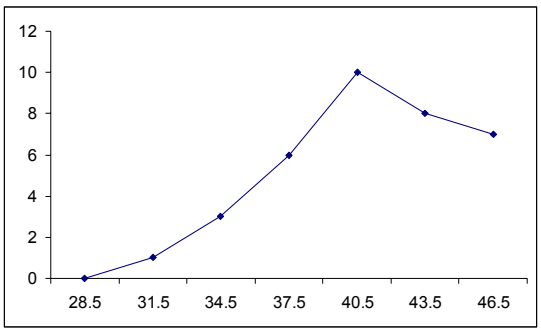
8. An advertisement for an exercise product states: "Using this product will burn 74% more calories." This is an example of
   A) changing the subject C) suspect samples
   B) detached statistics D) ambiguous averages

9. Rating hotels by a number of stars is an example of what level of measurement?
   A) nominal B) ordinal C) interval D) ratio

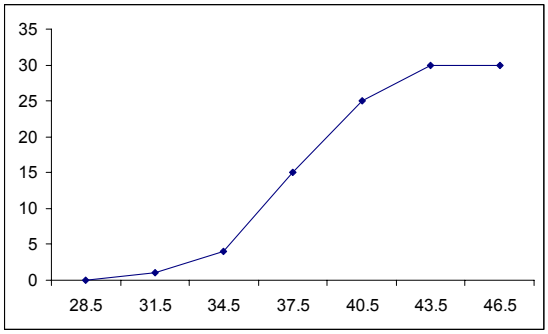
10. Using the following frequency distribution, Which of the following is the correct Ogive?

Temperature	Frequency
28.5–31.5	1
31.5–34.5	3
34.5–37.5	6
37.5–40.5	10
40.5–43.5	8
43.5–46.5	7

A)



B)



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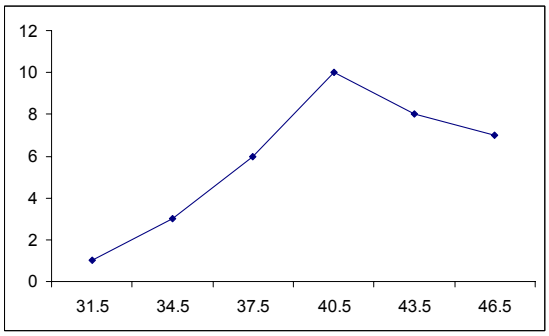
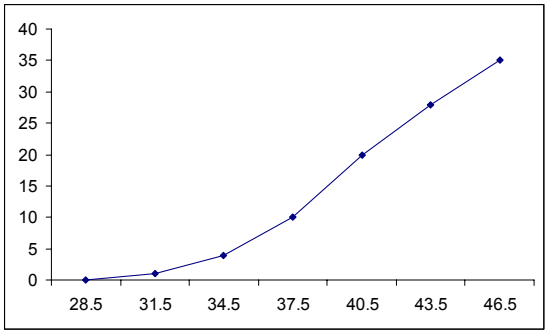


D)



11. Which type of graph represents the data by using vertical bars of various heights to indicate frequencies?

A) ogive B) frequency polygon C) histogram D) cumulative frequency

12. Classify the ratings of a movie ranging from poor to good to excellent
A) discrete B) qualitative C) continuous D) none of the above

13. Given the following frequency distribution:

Class Boundaries Ages	**Frequencies** (No. of students)
13.5–18.5	4
18.5–23.5	9
23.5–28.5	12
28.5–33.5	15
33.5–38.5	17

Number of students where age is less than 33.5
A) 15 B) 57 C) 25 D) 40

14. In a true experimental study, the subjects should be assigned to groups randomly. If this is not possible and a researcher uses intact groups, they are performing a…….
A) quasi-experimental study. C) cluster study.
B) convoluted study. D) stratified study.

15. What is the term for a characteristic or measure obtained by using all the data values for a specific population?
A) variable B) mode C) statistic D) parameter

16. A TV station interviews five movie viewers (مشاهدين) after the first showing of a movie. After finding out that all five enjoyed the movie very much, the reporter states that this movie will definitely(بالتأكيد) be the best movie for the summer. This is an example of
A) changing the subject C) suspect samples
B) detached statistics D) ambiguous averages

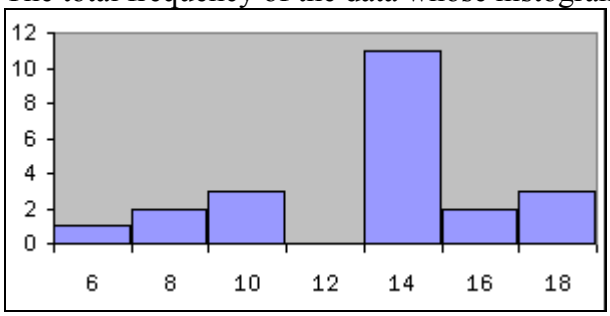
17. What is the mean of the following numbers?
–12, –9,4, 0
A) 6.25 B) 8.33 C) -4.25 D) -5.67

18. When a distribution is bell-shaped, approximately what percentage of data values will fall within 1 standard deviation of the mean?
A) 50% B) 68% C) 95% D) 99.7%

19. The graphs that have their distributions as proportions instead of raw data as frequencies are called……..
A) relative frequency graphs. C) histograms.
B) ogive graphs. D) frequency polygons.

20. What is the midrange of the following numbers?
7, 13, 12, 14, 6, 14, 20, 20, 20
A) 13 B) 14 C) 7 D) 20

21. The total frequency of the data whose histogram is shown below is approximately:



A) 11 B) 22 C) 50 D) 100

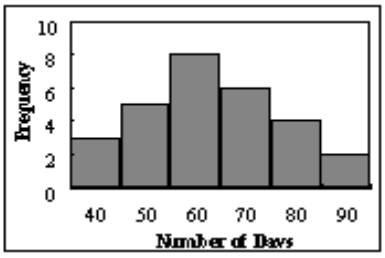
22. ……... divide the distribution into four groups
A) quartiles B) deciles C) percentiles D) interquartile

23. The range of the dataset –5, –9, 0, 11, –2 is
A) 3 B) 20 C) 2 D) -7

24. What type of sampling is being used if the country is divided into economic classes and a sample is chosen from each class to be surveyed?
A) random sampling C) stratified sampling
B) convenience sampling D) cluster sampling

25. One advantage of a(n) ……study is that it occurs in a natural setting.
A) observational study. C) independent study.
B) experimental study. D) quasi-experimental study.

26. How many classes in the following distribution?



A) 6 B) 8 C) 7 D) 40

27. Describe which measure of position was probably used:
"One-half of the factory (مصنع) workers make more than $5.37 per hour, and one-half make less than $5.37 per hour."
A) Q_1 B) Q_2 C) Q_3 D) IQR

28. If a set of 9 numbers has standard deviation 10, then it's variance is
A) 100.00 B) 3.33 C) 33.33 D) 30.00

29. Classify the amount of a drug injected (حقنت) into a laboratory mice (فئران تجارب).
A) discrete B) qualitative C) continuous D) none of the above

30. If the mean of five values is 64, find the sum of the values?
A) 320 B) 12.8 C) 64 D) 200

31. For the mathematics part of the SAT the mean is 514 with a standard deviation of 113, and for the mathematics part of the ACT the mean is 27 with a standard deviation of 5.1. Ali scores a 660 on SAT and a 20.6 on the ACT. Determine on which test he performed better.
A) SAT has a higher score than ACT.
B) ACT has a higher score than SAT.
C) both exam have the same scores..
D) the higher score can not be determine.

32. What is the term for a characteristic or attribute that can assume different values?
A) datum B) variable C) exponent D) sample

33. If a sample of data has mean 25 and variance 9, then it's coefficient of variation is
A) 83.3% B)12% C) 8.33% D) 0.12%

34. When data are categorized as, for example, marital status (single, married, divorced, widowed) the most appropriate measure of central tendency is the
A) mean B) mode C) median D) midrange

35. If the mean of a set of data is 24, and 18.40 has a z-score of –1.40, then the standard deviation must be:
A) 4 B) 16 C) 2 D) 8

36. Find the class boundaries for the class 2.15- 3.93?
A) 1.65- 4.43 B) 2.10- 3.43 C) 2.145- 3.935 D) 2.145- 3.940

37. When running an experimental study, the variable that is manipulated by the researcher is called……..
A) independent. C) dependent.
B) outcome. D) confounding.

38. A researcher stood at a busy intersection to see if the color of the automobile that a person drives is related to running red lights, the color of the automobile is called :
A) independent variable. C) dependent variable.
B) confounding variable. D) none of the above.

39. Which of the following best defines the relationship between confounding, dependent, and independent variables?
A) The confounding variable influences the independent variable, but has no effect on the dependent variable.
B) The confounding variable cannot be separated from the dependent variable.
C) The confounding variable may cause the dependent variable to act independently.
D) The confounding variable influences the dependent variable, but cannot be separated from the independent variable.

40. Statistics is the science of conducting studies to ……
A) solve a system of equations.
B) hypothesize, experiment, and form conclusions.
C) collect, organize, summarize, analyze, and draw conclusions from data.
D) monitor, study, and report on a subject.

41. Using the class 20–38, what is the class width?
A) 18 B) 19 C) 29 D) 38

42. When the majorities (الاغلبية) of the data values fall to the left of the mean, the distribution is said to be……..
A) symmetrical B) positively skewed C) negatively skewed D) none of the above

43. Identify the level of measurement for data that are the nationalities (جنسيات) listed in recent survey (Asian, European, or Hispanic).
A) nominal B) ordinal C) interval D) ratio

44. A student received the following grades: An A in Statistics (4 credits), a B in Physics II (5 credits), and a D in Tennis (1 credit). Assuming A = 4 grade points, B = 3 grade points, C = 2 grade points, D = 1 grade point, and F = 0 grade points, the student's grade point average is:
A) 3.0 B) 3.5 C) 3.2 D) 4.0

45. Subjects are randomly assigned to four groups. Each group is placed on one of four special diets: a low-fat diet, a high-fish diet, a combination of low-fat diet and high-fish diet, and a regular diet. After 6 months, the blood pressures of the groups are compared to see if diet has any effect on blood pressure. What type of study was this?
A) observational study. C) independent study.
B) experimental study. D) quasi-experimental study.

46. Identify the level of measurement for data that are the amount of fat (in grams) in 44 cookies.
A) nominal B) ordinal C) interval D) ratio

47. A…….. graph represents data that occur over a specific period of time.
A) ogive B) time series C) pareto D) stem and leaf

An insurance company (شركة تأمين) researcher conducted a survey on the number of car thefts (سرقت) in a large city for a period of 30 days last summer.
Use the below graph to answer questions (48 and 49)

4	2 3
5	0 1 2 2 4
6	1 3 4
7	0 1 2

48. What are the smallest and largest values?
A) 42,72 B) 42,70 C) 43,70 D) 43,72

49. Find the median
A) 50 B) 54 C) 61 D) 53

50. Calculate the appropriate measure of central tendency for the following data
10, 20, 180, 25, 22, 18
A) 21 B) 45.83 C) 170 D) 102.5

51. ……variable assumes values that can be counted.
A) discrete B) qualitative C) continuous D) none of the above

52. In a pie graph, if a pepperoni pizza were 24/72 of the distribution, how many degrees would be needed to represent pepperoni?
A) 90° B) 120° C) 60° D) 150°

53. Find Q_1 , Q_2 , and Q_3 for the following data set.
7, 21, 32, 38.

A) $Q_1 = 14$, $Q_2 = 26.5$, and $Q_3 = 35$ C) $Q_1 = 5$, $Q_2 = 20$, and $Q_3 = 39$

B) $Q_1 = 10$, $Q_2 = 25$, and $Q_3 = 36$ D) $Q_1 = 14$, $Q_2 = 25$, and $Q_3 = 25$

54. "Researchers stated that the shape of a person's ears is related to the person's aggression (السلوك العدوانى)". Which branch of statistics used in above statement?

A) predictive statistics C) inferential statistics

B) descriptive statistics D) differential statistics

55. What is the midpoint of the class 4-16?

A) 4 B) 10 C) 4 and 16 D) 10 and 12

56. The…….. is a method of organizing data and is a combination of sorting and graphing.

A) stem and leaf plot B) pareto chart C) frequency distribution D) pie graph

57. Which of the following correctly describes the relationship between a sample and a population?

A) A sample is a group of populations that are subject to observation.
B) A population is a group of samples that may or may not be included in a study.
C) A sample is a group of subjects selected from a population to be studied.
D) A population and a sample are not related.

58. All the values in a dataset are between 6 and 15, except for one value of 85. That value 85 is likely to be

A) the range B) an outlier C) the mean D) the boxplot

59. Four students from a class of twenty were questioned for a grade versus attendance, this would be an example of

A) sampling. B) surveying. C) interviewing. D) organizing.

60. Determine the standard deviation for this sample:
0, 1, 3, 5, 2

A) 3.7 B) 1.9 C) 5 D 0.4

Good luck
Stat110 team