SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

1) Define the terms population, sample, parameter and statistic. How does a census compare to a sample?

2) Distinguish between categorical and quantitative data. Give an example for each.

3) Define continuous and discrete data and give an example of each.

4) Define observational study and experiment. Define the terms "treatment group" and "placebo group" as part of your answer.

5) Define random sample. Explain why this is important in design of experiments.

6) Define the terms "stratified sampling", "systematic sampling", "cluster sampling", and "convenience sampling". Give examples for each.

7) A teacher was interested in knowing how much tax people pay in the United States. She selected a simple random sample of her friends and asked them about their taxes. Is this sample likely to be representative of all adults in the United States?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine whether the given value is a statistic or a parameter.

8) A sample of 120 employees of a company is selected, and the average age is found to be 37 years.  
   A) Parameter  B) Statistic

9) A health and fitness club surveys 40 randomly selected members and found that the average weight of those questioned is 157 lb.  
   A) Parameter  B) Statistic

Determine whether the given value is from a discrete or continuous data set.

10) The number of freshmen entering college in a certain year is 621.  
    A) Discrete  B) Continuous

11) The weight of Bill's pack as he sets off on a backpacking trip is 48.3 lb.  
    A) Discrete  B) Continuous

Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

12) The temperatures of eight different plastic spheres.  
    A) Ratio  B) Ordinal  C) Interval  D) Nominal

13) The sample of spheres categorized from softest to hardest.  
    A) Ratio  B) Nominal  C) Ordinal  D) Interval

14) Salaries of college professors.  
    A) Interval  B) Ratio  C) Ordinal  D) Nominal
15) Nationalities of survey respondents.
   A) Ratio   B) Interval   C) Nominal   D) Ordinal

16) Student’s grades, A, B, or C, on a test.
   A) Nominal   B) Interval   C) Ordinal   D) Ratio

Identify which of these types of sampling is used: random, stratified, systematic, cluster, convenience.

17) 49, 34, and 48 students are selected from the Sophomore, Junior, and Senior classes with 496, 348, and 481 students respectively.
   A) Systematic   B) Cluster   C) Stratified   D) Random   E) Convenience

18) A sample consists of every 49th student from a group of 496 students.
   A) Random   B) Convenience   C) Systematic   D) Stratified   E) Cluster

19) A market researcher selects 500 drivers under 30 years of age and 500 drivers over 30 years of age.
   A) Convenience   B) Systematic   C) Random   D) Stratified   E) Cluster

20) A market researcher selects 500 people from each of 10 cities.
   A) Systematic   B) Stratified   C) Random   D) Cluster   E) Convenience

21) A tax auditor selects every 1000th income tax return that is received.
   A) Stratified   B) Convenience   C) Random   D) Cluster   E) Systematic

22) To avoid working late, a quality control analyst simply inspects the first 100 items produced in a day.
   A) Random   B) Cluster   C) Convenience   D) Stratified   E) Systematic