A **Name: _____**

Bias and Sampling Worksheet

Multiple Choice

Identify the choice that best completes the statement or answers the question.

____ 1. A large corporation wants to find out which benefits plan its employees would prefer. Which procedure would be most likely to obtain a statistically unbiased sample?
   a. survey a random sample of employees from a list of all employees
   b. invite all employees to indicate their choices by e-mail
   c. place suggestion boxes at random locations in the company's plant and offices
   d. assemble a group with one member from each department and record the preferences of these employees

____ 2. A university polled 500 of its students, randomly selecting them proportional to the number of students enrolled in each degree program. Classify the sampling method.
   a. simple random
   b. stratified
   c. convenience
   d. systematic
   e. voluntary response

____ 3. To do market research, a telemarketing firm randomly selected 1000 names from a store's database and contacted them. Classify the sampling method.
   a. simple random
   b. stratified
   c. convenience
   d. systematic
   e. voluntary response

____ 4. To get reactions about a particular new car, readers of a car magazine were asked to mail in their answers to a survey. Classify this sampling method.
   a. simple random
   b. stratified
   c. convenience
   d. systematic
   e. voluntary response

____ 5. When a random starting point is chosen, followed by every *n*th individual, this sampling method is
   a. simple random sampling
   b. cluster random sampling
   c. stratified random sampling
   d. systematic random sampling

____ 6. Systematic random sampling is used to interview residents in 25% of 80 apartments in a building. The sampling interval would be
   a. 4
   b. 20
   c. 5
   d. 16

____ 7. A simple random sample of 200 people is selected from the 1230 male students in a university psychology course to take part in a psychological test. The population being considered is
   a. 200
   b. 1230
   c. people taking part in the test
   d. male students enrolled in a university psychology course

____ 8. Which question is unbiased?
   a. Does the school board have the right to enforce a dress code?
   b. Do you think the mayor is doing a good job in spite of his questionable character?
   c. Do you prefer daytime or evening television programming?
   d. Do you think the government should be allowed to cut down trees willy-nilly to build a new highway?

____ 9. Which question is biased?
   a. Do you prefer daytime or evening television programing?
   b. Should there be a school dress code?
   c. Do you prefer news or mindless sitcoms?
   d. Do you think a new highway should be built?

____ 10. When a research company polls residents about their voting intentions, new Canadians are under-represented. This is an example of
   a. sampling bias
   b. response bias
   c. non-response bias
   d. measurement bias

____ 11. A radio station asks its listeners to call in to answer a survey question on spending by politicians. This is an example of
   a. sampling bias
   b. response bias
   c. non-response bias
   d. measurement bias

____ 12. In an experiment, the heights of participants was measured by two different laboratory assistants. This may lead to
   a. sampling bias
   b. response bias
   c. non-response bias
   d. measurement bias

Matching

Match these terms with the descriptions below.

a. cluster sample
b. multi-stage sample
c. voluntary-response sample
d. convenience sample

____ 13. An easily accessible sample is chosen.
____ 14. Two or more levels of random sampling are used.
____ 15. The population is invited to respond.
____ 16. Samples are randomly selected from representative groups.

Bias and Sampling Worksheet
Answer Section

MULTIPLE CHOICE

1. ANS: A PTS: 1 DIF: 1
   REF: Knowledge & Understanding OBJ: Section 2.3 LOC: C2.1
   TOP: Organization of Data for Analysis KEY: sampling
2. ANS: B PTS: 1 DIF: 1 REF: Application
   OBJ: Section 2.3 LOC: C2.2 TOP: Organization of Data for Analysis
   KEY: sampling
3. ANS: A PTS: 1 DIF: 1 REF: Application
   OBJ: Section 2.3 LOC: C2.2 TOP: Organization of Data for Analysis
   KEY: sampling
4. ANS: E PTS: 1 DIF: 1 REF: Application
   OBJ: Section 2.3 LOC: C2.2 TOP: Organization of Data for Analysis
   KEY: sampling
5. ANS: D PTS: 1 DIF: 1
   REF: Knowledge & Understanding OBJ: Section 2.3 LOC: C2.2
   TOP: Organization of Data for Analysis KEY: sampling
6. ANS: A PTS: 1 DIF: 2 REF: Application
   OBJ: Section 2.3 LOC: C2.2 TOP: Organization of Data for Analysis
   KEY: sampling
7. ANS: D PTS: 1 DIF: 1 REF: Application
   OBJ: Section 2.3 LOC: C2.2 TOP: Organization of Data for Analysis
   KEY: population
8. ANS: C PTS: 1 DIF: 1
   REF: Knowledge & Understanding OBJ: Section 2.4 LOC: C2.3
   TOP: Organization of Data for Analysis KEY: bias
9. ANS: C PTS: 1 DIF: 1
   REF: Knowledge & Understanding OBJ: Section 2.4 LOC: C2.3
   TOP: Organization of Data for Analysis KEY: bias
10. ANS: C PTS: 1 DIF: 1 REF: Application
    OBJ: Section 2.4 LOC: C2.3 TOP: Organization of Data for Analysis
    KEY: bias
11. ANS: A PTS: 1 DIF: 1 REF: Application
    OBJ: Section 2.4 LOC: C2.3 TOP: Organization of Data for Analysis
    KEY: bias
12. ANS: D PTS: 1 DIF: 1 REF: Application
    OBJ: Section 2.4 LOC: C2.3 TOP: Organization of Data for Analysis
    KEY: bias

MATCHING

13. ANS: D PTS: 1 DIF: 2
REF: Knowledge & Understanding OBJ: Section 2.3 LOC: C2.2
TOP: Organization of Data for Analysis KEY: sampling
14. ANS: B PTS: 1 DIF: 2
REF: Knowledge & Understanding OBJ: Section 2.3 LOC: C2.2
TOP: Organization of Data for Analysis KEY: sampling
15. ANS: C PTS: 1 DIF: 2
REF: Knowledge & Understanding OBJ: Section 2.3 LOC: C2.2
TOP: Organization of Data for Analysis KEY: sampling
16. ANS: A PTS: 1 DIF: 2
REF: Knowledge & Understanding OBJ: Section 2.3 LOC: C2.2
TOP: Organization of Data for Analysis KEY: sampling