MULTIPLE CHOICE

1. When every possible sample of size *n* has the same chance of being selected, this is called:
   A. simple random sampling.
   B. stratified random sampling.
   C. cluster sampling.
   D. sampling error.

   ANS: A PTS: 1 DIF : Easy TOP : Sampling plans

2. Which of the following is not an example of primary data?
   A. Data published by the United States Bureau of Census.
   B. Data published by the Australian Bureau of Statistics.
   C. Data published by the Australian Stock Exchange (ASX).
   D. Data published by the United Nations Statistical Division.

   ANS: D PTS: 1 DIF : Easy TOP : Methods of collecting data

3. Which of the following must be avoided in designing a questionnaire?
   A. Dichotomous questions.
   B. Leading questions.
   C. Open-ended questions.
   D. Demographic questions.

   ANS: B PTS: 1 DIF : Easy TOP : Methods of collecting data

4. When the population is divided into mutually exclusive sets, and then a simple random sample is drawn from each set, this is called:
   A. simple random sampling.
   B. stratified random sampling.
   C. cluster sampling.
   D. selection bias.

   ANS: B PTS: 1 DIF : Moderate TOP : Sampling plans

5. A professor intends to compare the performances of his first year economics subject students at the four campuses of the university. In order to do so, he selects a random sample of 40 first year economics students from each campus. What is this type of sampling called?
   A. Stratified random sampling.
   B. Simple random sampling.
   C. Cluster sampling.
   D. None of these choices are correct.

   ANS: A PTS: 1 DIF : Moderate TOP : Sampling plans

6. Which of the following is a characteristic of cluster sampling?
   A. The population is not divided.
   B. The population is divided into groups of similar characteristics.
   C. The population is divided into homogeneous groups.
   D. The population is divided into heterogeneous groups

ANS: D PTS: 1 DIF : Moderate TOP : Sampling plans

7. Which of the following sampling plans uses random methods of selection?
   A. Simple random sampling.
   B. Simple random sampling, stratified random sampling and cluster sampling.
   C. Simple random sampling and stratified random sampling.
   D. Cluster sampling.

   ANS: B PTS: 1 DIF : Moderate TOP : Sampling plans

8. Which of the following is an example of non-sampling errors?
   A. Errors that arise from the recording of incorrect responses.
   B. Errors that arise when responses are not obtained from some members of the sample.
   C. Errors that arise when some members of the target population cannot possibly be selected in the sample.
   D. All of these choices are correct.

   ANS: D PTS: 1 DIF : Easy TOP : Sampling and non-sampling errors

TRUE/FALSE

1. A variable is any characteristic of a population or sample.

   ANS: T PTS: 1 DIF : Easy TOP : Types of data

2. The target population is the population about which we want to draw inferences, whereas the sampled population is the actual population from which the sample has been drawn.

   ANS: T PTS: 1 DIF : Moderate TOP : Sampling

3. Stratified sampling is preferred over cluster sampling when it is difficult or costly to develop a complete list of the population members.

   ANS: F PTS: 1 DIF : Moderate TOP : Sampling plans

4. Sampling error may be reduced by increasing the sample size but non-sampling error cannot be reduced by increasing the sample size.
   ANS: T PTS: 1 DIF : Moderate TOP : Sampling and non-sampling error

SHORT ANSWER

1. Describe the key differences between numerical data and nominal data.

   ANS:

Numerical data is observations that are real numbers, with units, where all calculations are valid as opposed to nominal data which are observations that are categorical and only calculations based on frequencies of occurrence are valid.

PTS: 1 DIF : Easy TOP : Types of data

2. List four of the most popular sources of statistical data.

ANS:
1. published data; 2. data collected from observational studies; 3. data collected from experimental studies and 4. data collected from surveys.

PTS: 1 DIF : Moderate TOP : Methods of collecting data

3. A politician wants to estimate the mean age of voters in her electorate. Unfortunately, she does not have a complete list of voters. Describe a sampling plan that would be suitable for her purposes.

ANS:
Use cluster sampling, letting each subdivision in the electorate represent a cluster.

PTS: 1 DIF : Moderate TOP : Sampling plans

4. A customer advocacy group would like to compare customers' satisfaction with four financial institutions. Describe a sampling plan that would be suitable for studying customers' satisfaction and for comparing the banks.

ANS:
Stratified random samples should be selected in which the strata are the four financial institutions and a simple random sample of customers is drawn at each institution.

PTS: 1 DIF : Moderate TOP : Sampling plans

5. Briefly describe three types of non-sampling errors.

ANS:
- Errors in data acquisition are errors that arise from the recording of incorrect responses.
- Nonresponse errors are errors that arise when responses are not obtained from some members of the sample.
- Selection bias refers to errors that arise when some members of the target population cannot possibly be selected in the sample.

PTS: 1 DIF : Moderate TOP : Sampling and non-sampling errors