Sociology 497
Fall, 2000 Name: __KEY (Answers in italics)___
Professor Schutte

Second Examination

Multiple Choice (one point each)

1. A measurement consisting of more than one dimension may be called a(n):
    a. construct
    b. index
    c. composite variable
    d. *all of the above*

2. Interval measurement necessitates a zero starting point.
    a. true
    b. *false*

3. Criterion Validity includes:
    a. *concurrent validity*
    b. construct validity
    c. both a and b
    d. none of the above

4. Reliability connotes accuracy while validity implies consistency.
    a. true
    b. *false*

5. The measure best illustrating consistency over time is:
    a. *test-retest reliability*
    b. split-half reliability
    c. construct validity
    d. concurrent validity

6. Construct validation can be measured by an item-scale analysis.
    a. *true*
    b. false

7. Which is not a part of the minimal criteria for an experimental design.
    a. at least two groups
    b. random assignment of subjects to conditions
    c. an outcome measure
    d. *a completely randomized design*

8. In a Solomon four group design, the only difference between the experimental and control group is the post-test.
    a. *true*
    b. false

9. Which design best characterizes an interaction effect:
    a. posttest control group design
    b. Solomon four group design
    c. *Completely randomized design*
    d. None of the above

10. In a latin square design, there are as many subjects as there are conditions.
    a. *true*
    b. false

11. Which of the following has six treatment conditions:
    a. a 3 x 2 SPD
    b. *a 3 x 2 CRD*
    c. a 2 x 2 x 2 RMD
    d. a and c only

12. A quasi-experimental design typically lacks random assignment to conditions.
    a. *true*
    b. false

13. Which of the following can one most likely enumerate.
    a. a universe
    b. an infinite population
    c. *a sampling frame*
    d. none of the above

14. The difference between a simple and systematic random sample is that the latter randomizes the order of the sampling frame elements and then chooses every nth element on the list.
    a. *true*
    b. false

15. Which of the following sampling procedures is more likely to be used in exploratory research.
    a. cluster
    b. stratified
    c. area
    d. *referral*

Definitions (two points each)

1. Index vs. Scale: *Both are composite variables. An index is the sum of individual indicators (e.g. SES), whereas a scale is a hierarchical set of indicators (e.g. as in a Guttman scale). Typically used with opinion questions.*

2. Concurrent vs. Predictive: *Both are a type of criterion validity. Concurrent correlates the measure with an another existing measure, whereas predictive correlates the measure with a (typically) behavioral outcome.*

3. Internal vs. External: *Both are measures of validity. Internal validity controls for the question "Did the Independent Variable have the intended impact?", whereas external validity controls for the question "Can I generalize these results?"*

4. ANOVA vs. MANOVA: *Both are analysis of variance techniques. ANOVA is used when there is only one independent variable; hence one F-value. MANOVA is used when there are two or more independent variables; hence the measure of interaction effects.*

5. Proportionate vs. Disproportionate: *Both refer to stratified random sampling. Proportionate means the population is divided prior to drawing the sample whereas disproportionate means the results are weighted after the data are collected.*

Short Answer (five points each)

1. Briefly classify, by example, the four levels of measurement and what operations they imply.
   Nominal: classification (equal, not equal) e.g. sex. Ordinal: classification and order (>, <) e.g. social class. Interval: classification, order, and equal intervals (+, -) e.g. GPA. Ratio: all of the above plus an absolute zero point (x, /) e.g. age.

2. Identify the main characteristics of Likert, Thurstone and Guttman Scaling techniques.
   Likert (1928), called summated rating, uses strongly agree to strongly disagree across questions; Thurstone (1932), called EAI, used judges to establish equal appearing intervals; Guttman (1948), called unidimensional scaling, tests the cumulative nature of questions via a coefficient of scaling.

3. Define what information is conveyed by the phrase: a "3 x 2 CRD"
   It tells us that we have two independent variables, one with three conditions and the other with two conditions, and a total of six treatments.

4. Distinguish non-probability from probability sampling, giving an example of each.
   Non-probability means that the elements of the population do not have a known probability of being picked in a sample, whereas probability sampling means each element has a know probability (typically an equally likely or random). A convenience sample would typify the former (i.e. we select elements based upon who is closest at hand), while a simple random sample would typify the latter (i.e. each element has exactly the same chance of being chosen).

5. Briefly describe the components that determine, and state how they affect, sample size.
   Sample size is determined by the 1) variation in the population; 2) the margin of error; and 3) the degree of confidence; The sample size N is directly related to the value of z and sigma; and inversely related to the margin of error.