Sociology 364/497 **Name**_____
Spring, 2003
Professor Schutte

Second Examination

Multiple Choice (one point each):

1. Which of the following is the measure of one instrument at two different points of time.
    a. split-half reliability
    b. face validity
    c. test-retest reliability
    d. construct validity

2. The difference between concurrent and predictive validity is that the latter correlates our measure to another existing measure.
    a. true
    b. false

3. Which of the following sampling procedures is more likely to be used in explanatory research.
    a. convenience
    b. referral
    c. stratified
    d. none of the above

4. All random samples are probability samples, but not all probability samples are random samples.
    a. true
    b. false

5. Which is not a part a complex experimental design.
    a. at least two independent variables
    b. at least three F-ratios
    c. at least four conditions
    d. all of the above are part

pre-test.

    a. true
    b. false

7. Which statistical test best reflects knowledge of the population mean and s.d..
    a. single sample z-test
    b. single sample t-test
    c. confidence interval
    d. none of the above

8. A two sample t-test and ANOVA are both found in the SPSS "compare means" sub-menu.
   a. true
   b. false

9. Which of the following has three treatment variables:
   a. a 3 x 2 CRD
   b. a 3 x 2 SPD
   c. a 2 x 2 x 2 CRD
   d. both a and b

10. An interrupted time series quasi-experimental design lacks a control group.
   a. true
   b. false

11. If the subject in a repeated measures design comes to understand the nature of the independent variable, such effect is called:
   a. history
   b. maturation
   c. mortality
   d. testing

12-15. In the following three problems please put the letter of the formulae name on the line next to the formula:

12. _____ $\mu = \overline{X} \pm t(\frac{\hat{S}}{\sqrt{N}})$ a. two sample t-test

13. _____ $\frac{\overline{X}-\mu}{\frac{\sigma}{\sqrt{N}}}$ b. confidence interval

14. _____ $\frac{n_i \sum(\overline{X}_j-\overline{X}_g)^2/K-1}{\sum_i \sum_j (X_{ij}-\overline{X}_j)^2/N-k}$ c. single sample z-test

15. _____ $\frac{(\overline{X}_1-\overline{X}_2)}{\sqrt{\frac{\hat{S}_1^2}{N_1}+\frac{\hat{S}_2^2}{N_2}}}$ a. F-ratio

Definitions (two points each)

1. Split-Half Reliability:

2. Addition Rule in Probability:

3. External Validity:

4. Confidence Internal:

5. ANOVA:

Short Answer (five points each):

1. What criterion distinguishes a probability from a non-probability sample. State in what context each would be used and give several examples of both types**.**

2. Identify the three components that determine sample size and state the proportional relationship of each to N.

3. Research in the past has shown that the population of students come to campus an average of 3.2 days per week, with a standard deviation of 1.4 days. This semester a random sample of 36 students were polled and determined to come to campus 4.1 days per week. Test the hypothesis ($P<.05$) that students today come to campus more this semester than in the past. If you reject Ho: within what interval could you be 95% sure the actual mean of all students today would fall?

4. Research shows that on campus break-ins at CSUN and UCLA during the past 24 months averaged 15 and 12 per month, respectively, with unbiased standard deviations of 4 and 3, respectively. Use the five steps of hypothesis testing to see if there a significant difference between these numbers on the two campuses (Use P<.01, alpha = 2.819)

5. You want to study the effects of sociology concentration on number of hours spent doing field work during the student's senior year. You select five students in each of the three concentrations (i.e. the experimental conditions) with the following outcomes. Test the hypothesis that concentration is related to number of hours of field work (use alpha < .01, F_{crit} = 5.90).

	General	Criminology	Social Welfare
	56	72	92
Hours of	58	76	98
Field Work	60	80	100
per student	62	84	102
	64	88	108