

405 SAMPLE EXAM QUESTIONS

The following questions were designed to have exactly one correct answer for each question. Read all of the alternatives before deciding on any particular one. Please note that on some questions if you decide that "two of the above are correct" you should indicate which two! There is no penalty for guessing and you should try to answer each question. There is no time limit (within reason). If you feel that a question is ambiguous please comment on the test sheet. Work carefully.

- (1) A professor is considering two exams. One has thirty items, the other has an additional ten items. The additional ten items are easy enough that all the students can pass them. That is, there will be no variance on those items. Given these two tests, which of the following statements are correct:
 - (a) the mean score will be higher on the second (40 item) test than on the first (30 item) test.
 - (b) students will feel they did better on the second test because they will get more right.
 - (c) the second test will take longer.
 - (d) the variance of the two tests will be the same.
 - (e) the reliabilities of the two tests will be the same.
 - (f) the validities of the two tests will be the same.
 - (g) all of the above statements about this test are correct.
- (2) A new test of ability has a mean of 100, a standard deviation of 16 and a reliability of .81. A group of 100 students are given this test two times. If a person has a score of 140 on the first test, what do you expect him/her to get on the second test?
 - (a) 181
 - (b) 140
 - (c) 136
 - (d) 132
 - (e) 126
 - (f) 113

For the next four questions we will refer to this table:

Variable	V1	V2	V3	V4
V1	1.0	0.4	0.3	0.2
V2	0.4	1.0	0.1	0.3
V3	0.3	0.1	1.0	0.5
V4	0.2	0.3	0.5	1.0

These will be converted to multiple choice:

- (a) Find the Variance of the composite of V1 and V2
 - (b) Find the Variance of the composite V3 and V4
 - (c) Find the covariance of (V1, V2) with (V3, V4)
 - (d) Find the correlation of (V1, V2) with (V3, V4)
- (3) In Factor analysis, the communalities are'
- (a) Factors are fictions they have nothing in common with anything in the real world
 - (b) The amount of variance accounted for a factor summed across all the variables.
 - (c) The amount of variance in an item explained by all the factors.
 - (d) Since I use components, who cares?
- (4) In a test formed from k items sampled from a domain with an average r of \bar{r} ,
- (a) what is amount of domain variance in an item?
 - (b) What is the amount of domain variance in the k item test?
 - (c) What would you expect the test to correlate with a another test also sampled from the same domain?