

GENERAL RULES FOR THE EXAM

This exam consists of 15 questions with three response options (a, b and c) that must be answered by writing the option chosen on the answer sheet. Only one of the alternatives is correct. **The errors do not subtract score.** You have 1 hour and a half to answer questions of this exam.

Questions

Case 1. Please, answer questions 1-4 with the following information.

A verbal fluency test consisting of 20 items has been applied to a sample of 60 people. The mean and standard deviation of the scores obtained have been 5 and 3 respectively; and the correlation between errors and empirical scores was 0.5.

1. Considering the original data of case study 1, approximately how many final items would the test have to have to achieve a reliability of 0.85?
 - a) 28
 - b) 38
 - c) 48
2. Considering the original data of case study 1, if the same test is applied to another similar sample, but whose standard deviation is twice bigger than the initial one, the reliability coefficient obtained in the second sample would be:
 - a) Appropriate
 - b) Inappropriate
 - c) Ambiguous
3. Using the normal error distribution method and a 99% confidence level, the confidence interval in which the true score of a person who in the original test obtained an empirical score of 10 points will be will be:
 - a) 5.38 – 12.12
 - b) 6.13 – 13.87
 - c) -5.23 – 25.92

4. Using the regression method and with a 99% confidence level, the confidence interval in which the true score of a person who obtained in the original test an empirical score of 10 points will be:
 - a) 5.38 – 12.12
 - b) 6.13 – 13.87
 - c) -5.23 – 25.92

Case 2. Please, answer questions 5-8 with the following information.

It is known that there is a direct relationship between attending psychometric classes and academic performance. We want to know if a knowledge test in psychometrics has the capacity to predict the final grade of a group of students. The test has been applied to a sample of students, obtaining a mean and a standard deviation of 8 and 1 points respectively. At the end of the course, these same students have been evaluated in academic performance, obtaining an average of 4 and a variance of 4 points respectively. Knowing that 64% of the variance of the scores of the participants in the criterion can be predicted from the test, calculate:

5. The alienation coefficient:
 - a) 0.8
 - b) 0.7
 - c) 0.6
6. The variance of the estimation errors:
 - a) 1.20
 - b) 1.44
 - c) 2.04
7. The **TYPICAL SCORE** that would be predicted in academic performance to a student who had obtained a raw score of 4 in the knowledge test:
 - a) -3.2
 - b) -4.2
 - c) -5.2
8. The lower and upper values of the confidence interval around the predicted raw score obtained from a raw score of 4 in the test, with a 99% confidence level would be:
 - a) -2.46 – 2.86
 - b) -5.50 – 0.70
 - c) 3.46 – 3.86

Case 3. Please, answer questions 9-10 with the following information.

The table presented below shows the total score obtained by 12 participants in two parallel tests of abstract reasoning composed of 15 items. At least 11 items have to be answered correctly to consider that the participants pass the tests.

Participants	1	2	3	4	5	6	7	8	9	10	11	12
Test A	10	14	11	12	12	10	9	11	10	8	10	11
Test B	9	13	10	10	12	10	8	10	10	6	11	7

9. Calculate the reliability coefficient on the assessment of fit between the two tests. Use the method proposed by Hambleton and Novick:

- a) 0.48
- b) 0.58
- c) 0.83

10. The value of the Kappa reliability coefficient is:

- a) Appropriate
- b) Inappropriate
- c) Ambiguous

Case 4. Please, answer questions 11-13 with the following information.

The scores obtained in a test were adjusted to a normal distribution. The mean obtained by the group was 8 and its standard deviation was 2. For a participant who obtained a raw score of 8 in the test, calculate:

11. The derived McCall's T typical score:

- a) 40
- b) 50
- c) 60

12. The score that would correspond on a derived scale with mean 20 and standard deviation 3:

- a) 20
- b) 17
- c) 13

13. The percentile that corresponds to the score obtained:

- a) 50
- b) 30
- c) 20

14. Assuming that the test and criterion scores are distributed according to the normal distribution, and that the correlation between test and criterion is 0.8. Calculate the enneatype obtained in the criterion by a subject that in the test obtained a typical score equal to zero.

- a) 5
- b) 6
- c) 7

15. If a participant obtains an empirical score of 8 points in a test, the mean and variance of the test being 6 and 9 respectively. What would his score be in another equivalent test in which the mean and variance were 10 and 4? Use the most appropriate method.

- a) 9.33
- b) 10.33
- c) 11.33

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ANSWER SHEET TYPE B

Item	Option	Item	Option	Item	Option
1	B	6	B	11	B
2	A	7	A	12	A
3	B	8	B	13	A
4	A	9	B	14	A
5	C	10	B	15	C