

一、選擇題 (40 分) 請選出最佳的一個選項

1. The \_\_\_\_\_ details tests in order to help the consumer select an appropriate test.
  - a) Measurement Handbook
  - b) APA Standards of Testing
  - c) Tests and Measurement Catalog
  - d) Mental Measurements Yearbook
  
2. Individuals with training versus without training in psychology are
  - a) more likely to recognize the limitations of tests they use
  - b) only qualified to use tests if they are licensed
  - c) less likely to use tests which require a great deal of interpretation
  - d) both b and c
  
3. The first scale to provide a practical and reasonably valid measure of intelligence was developed by
  - a) Stanford and Binet
  - b) Binet and Swallow
  - c) Galton and Cattell
  - d) Binet and Simon
  
4. Percentile transformations change the relationship between scores such that scores
  - a) near the center of the distribution differ substantially in their percentile ranks
  - b) near the center of the distribution are similar in their percentile ranks
  - c) at the extremes of the distribution differ substantially in their percentile ranks
  - d) throughout the same distribution have equivalent percentile ranks
  
5. The techniques used to equate scores across groups of examinees or forms of tests involve
  - a) comparing z-scores instead of raw scores
  - b) using anchor items
  - c) having all groups take all forms of the test
  - d) both a and b
  
6. A second grade child's score on a vocabulary test has a grade equivalent of 4.0. This child
  - a) should be in fourth grade
  - b) should be moved to third grade at least
  - c) is achieving at the overall level of most children entering fourth grade
  - d) earned a score that we would expect a typical fourth grader to earn on this test

7. In developing norms, it is important to
  - a) select samples that represent the target population
  - b) obtain a representative sample from the general population
  - c) obtain educational backgrounds on all samples
  - d) all of the above
  
8. In contrast to norm-referenced tests which assess one's performance relative to other individuals, criterion-referenced tests
  - a) assess one's performance in comparison to some standard(s)
  - b) assess one's performance in comparison to groups of people
  - c) evaluate one's performance within a group setting
  - d) are less challenging to develop
  
9. "True score" on a measure of anxiety represents
  - a) a person's real level of anxiety
  - b) a person's obtained level of anxiety
  - c) a combination of all factors leading to consistency in anxiety scores
  - d) both a and c
  
10. The standard error of measurement is a function of which two factors?
  - a) reliability of the test and range of test scores
  - b) variability of test scores and range of test scores
  - c) reliability of the test and variability of test scores
  - d) variability of test scores and sample size
  
11. A method of estimating the true correlation between X and Y given the correlation between two unreliable measures of X and Y is by using the
  - a) shrinkage coefficient
  - b) reliability coefficient
  - c) correction for attenuation
  - d) corrected reliability index
  
12. If individual differences are \_\_\_\_\_, reliability will be \_\_\_\_\_.
  - a) small; low
  - b) small; high
  - c) large; low
  - d) large; zero
  
13. Reliability of a test can be increased by
  - a) decreasing inter-item correlations
  - b) decreasing number of test items
  - c) increasing number of test items
  - d) both a and c

14. What is "validated" in a validity study?
  - a) the test
  - b) test scores
  - c) the inferences reached on the basis of test scores
  - d) all of the above
  
15. The most appropriate method(s) for construct validation is(are) the
  - a) correlation coefficient
  - b) laboratory experiment
  - c) multitrait-multimethod approach
  - d) all are appropriate methods
  
16. The ideal criterion-related validity strategy is
  - a) predictive validity
  - b) concurrent validity
  - c) construct validity
  - d) face validity
  
17. Range restriction is most likely to occur in
  - a) concurrent validity studies
  - b) predictive validity studies
  - c) construct validity studies
  - d) both a and b
  
18. Item Response Theory provides measures that are
  - a) sample specific
  - b) sample indifferent
  - c) sample invariant
  - d) sample inversed
  
19. When the item-total correlation is \_\_\_\_\_, the slope of the item characteristic curve is \_\_\_\_\_.
  - a) negative; positive
  - b) negative; negative
  - c) positive; negative
  - d) positive; zero
  
20. Computerized adaptive tests (CAT) attempt to
  - a) measure an individual's ability to react to various stimuli
  - b) tailor test items to an individual's ability level
  - c) obtain a wide variety of information about an individual in a relatively short period of time
  - d) allow individuals to choose a test format

## 二、問答題

Suppose a two-parameter logistic model is fit to data for a test. For the first two items  $P_1(\theta) = 0.5$  and  $P_2(\theta) = 0.7$  for a particular latent trait score,  $\theta$ . In addition, for these two items,  $P(+, + | \theta) = 0.45$  and  $P(-, + | \theta) = 0.05$ , where '+' is denoted as a correct answer and '-' as an incorrect answer. Do these results suggest the test is unidimensional? Why or why not? (10 分)

三、需要進行統計檢定時請設定  $\alpha = 0.05$ ，並使用最後的附表

- 想像你到了小人國，隨機抽取 8 位小人國的人，得到身高為 9.0, 7.6, 8.4, 12.0, 6.4, 9.6, 4.2 和 6.8 公分。試考驗小人國的人平均身高不及 10 公分這種說法是否成立？〔10 分〕
- 某高中老師調查 100 位高中學生有無打工經驗，得到下表結果。試考驗高一、高二以及高三學生有過打工經驗的比率是否相同？〔10 分〕

| 打工經驗   | 高一 | 高二 | 高三 | 人數合計 |
|--------|----|----|----|------|
| 有      | 10 | 15 | 20 | 45   |
| 無      | 30 | 15 | 10 | 55   |
| 年級人數合計 | 40 | 30 | 30 |      |

- 消費者保護機構檢驗市售汽車電池的使用期限，隨機抽樣 A、B、C 三家廠商各 10 顆電池，並觀察其使用壽命，得到數據如下所示。請使用變異數分析判斷三廠牌電池使用壽命是否有差異。〔15 分〕

| 廠牌    | A  | B  | C  |
|-------|----|----|----|
| 樣本數   | 10 | 10 | 10 |
| 平均壽命  | 16 | 20 | 24 |
| 樣本變異數 | 20 | 25 | 30 |

- 某年學測英文作文有兩位老師共同批改。為了解兩位老師評分標準是否一致，先隨機抽取 10 份考卷由兩位老師共同批改之後，得到下表分數。請問依據這個樣本，是否能斷定兩位閱卷老師的評分標準不一致？〔15 分〕

| 學生   | 一 | 二  | 三  | 四  | 五  | 六  | 七 | 八  | 九  | 十 |
|------|---|----|----|----|----|----|---|----|----|---|
| 老師 A | 5 | 10 | 9  | 12 | 13 | 14 | 9 | 12 | 9  | 8 |
| 老師 B | 6 | 12 | 10 | 13 | 8  | 10 | 6 | 8  | 12 | 6 |

國立中正大學九十八學年度碩士班招生考試試題

系所別：心理學系

科目：心理統計學與心理測驗學

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Critical Values for t

|    | 單尾 $\alpha$ | 0.05   | 0.025  | 0.01   | 0.005  |
|----|-------------|--------|--------|--------|--------|
| df | 雙尾 $\alpha$ | 0.10   | 0.05   | 0.025  | 0.01   |
| 2  |             | 2.92   | 4.3027 | 6.2054 | 9.925  |
| 3  |             | 2.3534 | 3.1824 | 4.1765 | 5.8408 |
| 4  |             | 2.1318 | 2.7765 | 3.4954 | 4.6041 |
| 5  |             | 2.015  | 2.5706 | 3.1634 | 4.0321 |
| 6  |             | 1.9432 | 2.4469 | 2.9687 | 3.7074 |
| 7  |             | 1.8946 | 2.3646 | 2.8412 | 3.4995 |
| 8  |             | 1.8595 | 2.306  | 2.7515 | 3.3554 |
| 9  |             | 1.8331 | 2.2622 | 2.685  | 3.2498 |
| 10 |             | 1.8125 | 2.2281 | 2.6338 | 3.1693 |

Critical Values for  $\chi^2$

| df | $\alpha$ | 0.1     | 0.05    | 0.025    | 0.01     | 0.005    |
|----|----------|---------|---------|----------|----------|----------|
| 1  |          | 2.70554 | 3.84146 | 5.02389  | 6.6349   | 7.87944  |
| 2  |          | 4.60517 | 5.99146 | 7.37776  | 9.21034  | 10.59663 |
| 3  |          | 6.25139 | 7.81473 | 9.3484   | 11.34487 | 12.83816 |
| 4  |          | 7.77944 | 9.48773 | 11.14329 | 13.2767  | 14.86026 |
| 5  |          | 9.23636 | 11.0705 | 12.8325  | 15.08627 | 16.7496  |

F table for  $\alpha = 0.05$

| df2/df1 | 1      | 2      | 3      | 4      | 5      | 6      |
|---------|--------|--------|--------|--------|--------|--------|
| 26      | 4.2252 | 3.369  | 2.9752 | 2.7426 | 2.5868 | 2.4741 |
| 27      | 4.21   | 3.3541 | 2.9604 | 2.7278 | 2.5719 | 2.4591 |
| 28      | 4.196  | 3.3404 | 2.9467 | 2.7141 | 2.5581 | 2.4453 |
| 29      | 4.183  | 3.3277 | 2.934  | 2.7014 | 2.5454 | 2.4324 |
| 30      | 4.1709 | 3.3158 | 2.9223 | 2.6896 | 2.5336 | 2.4205 |

