

國立中正大學九十六學年度博士班招生考試試題

系所別 (組別): 心理學系

科目: 心理計量學

※ 本試卷共二頁，含八大題，合計 100 分。

- 一、影響測驗信度的因素有那些？請簡要說明。(10 分)
- 二、何謂 concurrent validity？請說明其在實務上的使用限制。(10 分)
- 三、相對於古典測驗理論，IRT (item response theory) 的一個重要特質是 sample invariant，請說明該特質。(10 分)
- 四、在電腦適性測驗(computerized adaptive testing)中，不同的受試者施測不同的試題，請問其成績如何評定？受試者的成績可以直接進行比較嗎？請說明原因。(10 分)
- 五、請說明相關分析 (correlation analysis)、迴歸分析 (regression analysis)、路徑分析 (path analysis)、以及結構方程模型 (structural equation modeling)，並比較之間的異同。(15 分)
- 六、請說明探索性因素分析 (exploratory factor analysis) 與確認性因素分析 (confirmatory factor analysis)，並比較之間的異同。同時，請說明此兩種因素分析方式的適用情境與可能的限制為何。(15 分)
- 七、In a bi-conditional, operant discrimination task, we trained animals to press the left key when they saw a visual signal (light), and the right key when an acoustic signal (tone) was given. In the beginning of a trial either a light or a tone signal was given. Animals can press the key only once. After that, the key will be retracted. Now, after intensive training, an animal made 30 correct responses in of a 50-trial session. Can we claim that the training was successful? Please argument your answer with statistical tests. (15 分)



續頁

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八、We carried out an experiment to test the role of the CA3 sub-region of hippocampus in the memory mechanism of rats. There were three groups: untreated, sham surgery, and CA3-lesion. Animals were tested in a 4-object, 3-trial, spontaneous object exploration task. In each of the first two sampling trials, animals were allowed to freely explore two sets of four identical, novel objects (designated as O and R; e.g. Fig. 1 left and middle). In the final testing trial animals encountered a mixed set consisting of two O and R objects (e.g. Fig. 1 right). One from each of the two sets of objects was placed in the same location as in the sample trials (Os and Rs in Fig. 1 right). The other two objects were placed in new locations (Od and Rd in Fig. 1 right). Time spent for exploring the objects was recorded.

It has been previously shown that, when there are two choices, animals show preference for the novel object/place over the familiar one, thus evidencing their ability to remember which object/location they have previously encountered. When both objects/places are familiar, they can remember the temporal order of their previous encounters and show preference for the older one.

Now, the results of our experiment were shown in Fig. 2. Please advice us what statistical analyses we shall carry out, and what interpretations can we make. (15 分)

Fig. 1

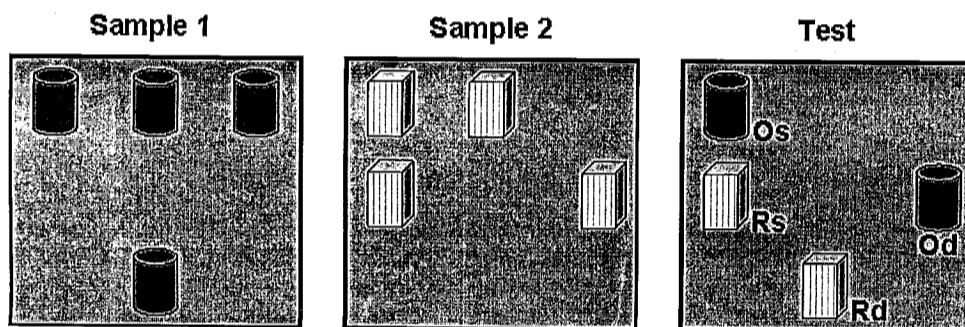


Fig. 2

