

國立臺北科技大學

九十三學年度技術及職業教育研究所博士班入學考試

教育研究法與統計試題

填准考證號碼

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注意事項：

1. 本試題共五大題，配分共 100 分。
2. 請按順序標明題號作答，不必抄題。
3. 全部答案均須答在答案卷之答案欄內，否則不予計分。

I. ESSAY QUESTIONS (You can answer in English or Chinese.)

1. 某研究者經隨機抽訪 140 人（教授 30 人、副教授 40 人、助理教授 36 人、講師 34 人；男性 85 人，女性 55 人），想探討「不同職級、不同性別的大學教師其年度平均發表文章篇數有無顯著差異」。請回答下列問題：(20%)
 - (1) 請各寫出符合本研究目的之研究假設或統計假設？
 - (2) 其各需採用那一種統計分析方法？
 - (3) 若分析結果得知不同職級教師於該年度發表之平均文章篇數有顯著差異，請問如何進一步分析以瞭解差異情形？
2. Please draw up a research proposal. The illustrations of the research topic, purposes, and methods are needed. (20%)
3. What is the difference between qualitative research and quantitative research? (20%)
4. Explain the following terms. (20%)
 - (1) Pilot test
 - (2) Validity
 - (3) Sampling

(4) Nominal variable

(5) Power of test

I. TRUE / FALSE QUESTIONS (20%)

Note: Please answer T (True) or F (False) on the Answer Sheet.

1. The standard deviation is a measure of the amount of variation in data.
2. Any sample taken from a large enough population can be considered to be random.
3. If the confidence interval is too wide, then we may suspect that our sample is not randomly selected.
4. If every value of a variable is multiplied by 2, then the variance will be multiplied by 4.
5. A type I error occurs when H_0 is falsely rejected.
6. Coin-tossing experiments can be described by the binomial distribution.
7. If H_0 is rejected by a one-sided test, then it will be rejected by a two-sided test with the same level of signification.
8. For a 3×9 contingency table, the number of degree of freedom would be 27.
9. The F test is to the t test as the Kruskal-Wallis test is to the Mann-Whitney test.
10. The histogram is a pictorial version of the frequency table of grouped data.