

慈濟大學 106 學年度
碩博士班、博士學位學程暨碩士在職專班
招生考試命題紙

科目：研究方法

共6頁

一、選擇題 Choose the one alternative that best completes the statement or answers the question. (65%, 每題 2.5 分)

- _____ 1. A theoretical probability distribution of values of a statistic resulting from selecting all possible samples of size N from a population is called a _____ distribution of that statistic.
- a) relative frequency
 - b) sampling
 - c) normal
 - d) simple
- _____ 2. If you obtained a standard score on a history test expressed as $z = 0.0$ and a standard score on a mathematics test of $z = -0.5$, then you did _____.
- a) worse than average on both tests
 - b) relatively better on the math test
 - c) relatively better on the history test
 - d) better than average on both tests
- _____ 3. If you wish to increase the confidence level for the estimation of a parameter, then the _____.
- a) variance must be increased
 - b) sample must be smaller
 - c) confidence interval will get larger
 - d) confidence interval will get smaller
- _____ 4. The probability of correctly accepting H_1 when H_1 is true is provided by _____.
- a) β
 - b) α
 - c) $1 - \beta$
 - d) $1 - \alpha$
- _____ 5. If the results of an experiment using a one-factor between-subjects analysis of variance were summarized as $F(2,12) = 2.24, p > .05$, then you know that the experiment used _____ subjects and the F_{obs} was _____.
- a) 12; nonsignificant
 - b) 15; statistically significant
 - c) 15; nonsignificant

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d) 12; statistically significant

_____ 6. When the measure of central tendency is the median, which of the following is an appropriate measure of variability?

- a) Range
- b) Variance
- c) Standard deviation
- d) All the above

_____ 7. The _____ the variation in the population and the _____ the sample size, then the larger the estimated standard error.

- a) less; larger
- b) more; larger
- c) more; smaller
- d) less; smaller

_____ 8. The error in estimating a population mean from a sample mean is called _____ error.

- a) sampling
- b) random
- c) distribution
- d) chance

_____ 9. The rejection region for t_{ind} represents the values of t that have a probability _____ alpha if _____.

- a) greater than; H_0 is true
- b) greater than; H_1 is false
- c) less than or equal to; H_0 is true
- d) less than or equal to; H_1 false

_____ 10. A researcher can expect to obtain more accurate estimates of population parameters with _____ random samples from populations in which the variability in scores to be sampled is _____.

- a) small; small
- b) large; large

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- c) small; large
d) large; small

_____ 11. In a normal distribution, what proportion of scores fall within the interval between the first standard deviation above the mean to the second standard deviation above the mean?

- a) .3413
b) .8413
c) .1359
d) .6826

_____ 12. One characteristic of the two hypotheses formulated for a statistical test is that the hypotheses must _____.

- a) be statements about the same sample
b) be written as a sentence
c) specify the sample value
d) include all possible values of the parameter in the population

_____ 13. The total variation of a subject's score in a one-factor between-subjects analysis of variance can be separated into the _____.

- a) effects of the independent variable and the dependent variable
b) between-groups and within-groups components
c) mean and the standard deviation
d) sum of squares and degrees of freedom

_____ 14. If the result of a one-sample t test is reported as $t(49) = 2.329, p < .05$, then you know that _____.

- a) the alpha level was less than .05
b) the sample size was 49
c) the critical value of t was 2.329
d) none of the above

_____ 15. The denominator of t_{ind} is _____.

- a) the sampling distribution of the difference between means
b) the standard error of the difference between means

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- c) the difference between the population means
d) a measure of how much two sample means differ from each other

_____ 16. The choice of a measure of variability to describe scores is *not* determined by which of the following?

- a) The size of the class interval
b) The shape of the frequency distribution
c) The scale of measurement
d) The intended further statistical analysis of the data

_____ 17. Which of the following is an appropriate null hypothesis for a chi-square test of independence?

- a) The means of populations *A* and *B* are equal.
b) The mean of the population is equal to the mean of the sample.
c) The distribution of scores for population *A* is identical to the distribution of scores for population *B*.
d) The row and column variables are independent in the population.

_____ 18. In a test to determine if *r* is statistically significant, the *df* for r_{obs} are equal to _____.

- a) $N_{\text{pairs}} - 1$
b) $N_{\text{pairs}} + 2$
c) N_{pairs}
d) $N_{\text{pairs}} - 2$

_____ 19. The normal distribution _____.

- a) is a theoretical distribution
b) is symmetrical and asymptotic
c) can be described completely by knowing its mean and standard deviation
d) all the above

_____ 20. If H_0 is true in a chi-square test of independence, then the expected and observed _____.

- a) frequencies in a cell of a contingency table should be unequal
b) standard deviations in a cell of a contingency table should be about equal
c) frequencies in a cell of a contingency table should be about equal

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d) means in a cell of a contingency table should be about equal

_____ 21. The t test is appropriate for analyzing data from a one-factor _____ design using _____ levels of an independent variable.

- a) within-subjects; three or more
- b) within-subjects; two
- c) between-subjects; three or more
- d) between-subjects; two

_____ 22. The median _____.

- a) is the most frequently occurring score in a distribution
- b) is not affected by extreme scores in the tails of a distribution
- c) does not exist for a bimodal distribution
- d) cannot be calculated if a distribution is either positively or negatively skewed

_____ 23. Eta squared for a one-factor between-subjects analysis of variance is a measure of the _____.

- a) probability of making correct decisions about the statistical null and alternative hypotheses
- b) strength of effect of an independent variable
- c) amount of error variation within groups
- d) power of a statistical test

_____ 24. A parametric statistical test involves hypotheses about _____.

- a) population values such as the mean and variance
- b) measures of central tendency such as the mode and median
- c) sample statistics such as the mean and standard deviation
- d) sample measures of central tendency and variability

_____ 25. An assumption of the statistical test for the significance of r is that the _____.

- a) variances of X and Y are equal
- b) X and Y scores are statistically independent
- c) X and Y scores form a bivariate normal distribution
- d) means of the X and Y populations are equal

_____ 26. Generally, the mean is the preferred measure of central tendency because it is _____.

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-
- a) more useful for inferential statistics
 - b) more stable than the median or the mode
 - c) easier to calculate
 - d) less affected by skewness in the distribution

二、 解釋名詞（10%，每題5分）

- 1. 代表性信度(representative reliability)
- 2. 效標效度（criterion validity）

三、 申論題 (25%)

- 1. 請你試著設計一個簡單的研究。首先請簡述你想進行的研究主題是什麼。根據這個主題，你會擬定出怎樣的假設?(5%) 然後為了驗證你的假設，你將會如何採樣(sampling)?(5分) 以及你將會測量哪一些變項?(5%) 此外，請試著在你的研究中加入所謂的中介變項(mediator)和調節變項(moderator)，最後並請簡述中介變項和調節變項的作用分別是什麼?(10%)