

系所組別：老年學研究所甲組

考試科目：社會研究法

考試日期：0220，節次：3

※ 考生請注意：本試題 可 不可 使用計算機

一、解釋名詞【共 20 分，每題 2 分】

1. 集中趨勢 (central tendency)
2. 母體參數 (Parameter)
3. 隨機抽樣 (Random sampling)
4. 樣本統計量 (Statistics)
5. 抽樣分配 (Sampling distribution)
6. 標準誤 (Standard error)
7. 中央極限定理 (Central limit theorem)
8. 95%的信賴區間 (95% confidence interval)
9. 實驗控制 (Experimental control)
10. 統計控制 (Statistical control)

二、選擇題【共 20 分，每題 2 分】

1. A sample of 10 numbers has a standard deviation (標準差) of 5. If those same numbers were a population, what would the population standard deviation be?
(a) 4.3 (b) 4.75 (c) 5 (d) 5.7
2. A political scientist (政治學者) is studying voters in California. It is appropriate for him to use a mean to describe
(a) the age of a typical voter.
(b) the party affiliation(所屬政黨) of a typical voter.
(c) the county of residence(居住地) of a typical voter.
(d) none of the above
3. The standard deviation of a normal population is 10. You take a sample of 25 items from this population and compute a 95% confidence interval(信賴區間). In order to compute the confidence interval, you will use
(a) the t table because the degrees of freedom will be 24.
(b) the t table because you have estimated the standard deviation from the sample.
(c) the z table because the population standard deviation is known.
(d) the z table because the sample size is small.
4. Suppose the coefficient of correlation(相關係數) between the two variables x and y was found to be 0.96, we can say that
(a) x and y have variances that are significantly different.
(b) x and y have means that are significantly different.
(c) x and y have a strong linear relationship.
(d) The means of x and y are about the same.

(背面仍有題目,請繼續作答)

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5. Which of the following is **NOT** generally true?
- (a) The standard deviation and interquartile range(四分位差) are both measures of scale.
 - (b) The median is less affected by outliers than is the mean.
 - (c) For normal distributions, the interquartile range is about 1.35 times the standard deviation.
 - (d) Outliers are usually caused by mistakes and should be removed from the data.
6. Which of the following is **NOT** a necessary assumption underlying the use of the Analysis of Variance technique?
- (a) The samples are independent and randomly selected.
 - (b) The populations are normally distributed.
 - (c) The variances of the populations are the same.
 - (d) The means of the populations are equal.
7. Eleven cars of a certain model, between one and seven years of age, were randomly selected from the classified ads. The following summary statistics on their ages (x in years) and prices (y in 1000 dollars) were used to obtain the regression equation
- $$\hat{y} = \hat{\beta}_0 + \hat{\beta}_1 x = 19.8 - 1.56x.$$
- Which of the following statements is correct?
- (a) The price will increase by \$1560 for every 1-year increase in age.
 - (b) The relationship between price and age is positive.
 - (c) The price for a car with 0 year of age is \$19800.
 - (d) None of the above
8. A survey is to be undertaken of recent gerontology graduates in order to compare the starting salaries of **women and men**. For each graduate, three variables are to be recorded (among others): sex, starting salary, and area of specialization.
- (a) Sex and starting salary are explanatory variables; area of specialization is a response variable.
 - (b) Sex is an explanatory variable; starting salary and area of specialization are response variables.
 - (c) Sex is an explanatory variable; starting salary is a response variable; area of specialization is a possible confounding variable.
 - (d) Sex is a response variable; starting salary is an explanatory variable; area of specialization is a possible confounding variable.

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9. Which of the following is **CORRECT**?
- (a) A large sample size always ensures that our sample is representative of the population.
 - (b) If all other things are equal, we need a larger sample size for a larger population.
 - (c) In a chosen sample, an estimate will be less variable with a large sample size and hence more precise.
 - (d) In random samples, the randomization ensures that we get precise and accurate estimates.
10. Which of the following statements is **FALSE**?
- (a) Nonresponse can cause bias in surveys because non-respondents often tend to behave differently from people who respond.
 - (b) Non-sampling errors are often bigger than the random sampling errors in surveys.
 - (c) Slight changes in the wording of questions can make a measurable difference to survey results.
 - (d) Sophisticated statistical methods(精巧的統計方法) can always correct the results if the population you are sampling from is different from the population of interest, e.g. due to under-coverage.

三、申論題【任選三題作答。共 60 分，每題 20 分】

1. Assess the **strengths and weaknesses** of using experimental designs in social research.
2. Compare and discuss the possibility of **arriving causal claims** using experiments and surveys.
3. What is the importance of **inference** in the social sciences, and how can inference be achieved using different research methods?
4. How do **sampling techniques** vary between qualitative and quantitative social research?
5. Outline and critique notions of **validity and reliability** in qualitative research.
6. Compare and discuss the **strengths and weaknesses** of interviews and focus groups in qualitative research.

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