

國立中山大學九十學年度碩博士班招生考試試題

科目：經濟學【公事所碩士班】

共 4 頁 第 1 頁

一、Multiple-Choice (80%) Choose the one alternative that best completes the statement or answers the question.

1. Although some of the statements below are true of both normal goods and inferior goods, only one of the statements defines a normal good. Which one?
 - (A) Normal goods are those for which the income effect is positive.
 - (B) Normal goods are those for which the income effect is negative.
 - (C) Normal goods are those for which the substitution effect overrides the income effect.
 - (D) Normal goods are those for which the income effect overrides the substitution effect.
 - (E) Normal goods are those for which demand increases when price increases.

2. Which of the following will not cause a demand curve to shift position?
 - (A) a doubling of the good's price.
 - (B) a doubling of income.
 - (C) a doubling of the price of a closely substitutable goods.
 - (D) a doubling of preference.

3. The demand for radios is measured by $Q_D = 60 - \left(\frac{1}{2}\right)P$, and the supply of radios is measured by $Q_S = \left(\frac{1}{2}\right)P - 10$. Assume that the radio market is perfectly competitive. The equilibrium price of radio is _____ and the equilibrium quantity is _____. Suppose now that the government sets a price ceiling of \$40. This will cause _____.
 - (A) \$70 · 25; a shortage of 30 radios.
 - (B) \$70 · 25; the price and quantity of radios not change.
 - (C) \$50 · 40; a shortage of 30 radios.
 - (D) \$30 · 80; a surplus of 50 radios.
 - (E) \$30 · 80; the price and quantity of radios not change.

4. With only two goods, X and Y, if X and Y are gross substitutes, a rise in P_X must necessarily
 - (A) increase spending in X.
 - (B) increase spending in Y.
 - (C) reduce spending in X.
 - (D) reduce spending in Y.

5. In the tea harvest is bad in a particular year, what should happen in the market for coffee?
 - (A) Increased prices and decreased quantity.
 - (B) Increased prices and increased quantity.
 - (C) Decreased prices and increased quantity.
 - (D) Decreased prices and decreased quantity.
 - (E) No change in equilibrium price and quantity.

6. If policymakers desire to reduce the quantity of water demanded by 20%, and water has an elasticity coefficient of 0.5, then the price of water must be
 - (a) increased by 10%.
 - (b) increased by 20%.
 - (c) reduced by 10%.
 - (d) increased by 40%.

國立中山大學九十學年度碩博士班招生考試試題

科目：經濟學【公事所碩士班】

共 4 頁 第 2 頁

7. A "good friend" is someone who has a _____ price elasticity of demand for your companionship.
(A) both (B) and (C) (B) low
(C) none of the above (D) high
(E) unit.
8. A decrease in the supply of a factor of production will
(A) decrease factor income if the elasticity of demand is greater than 1.
(B) decrease factor income if the elasticity of demand is less than 1.
(C) always decrease the factor income.
(D) always increase the factor income.
9. A production possibilities curve depicts the maximum amount of two goods that can be produced if:
(A) all resources are fully employed.
(B) the prices of the two goods are identical.
(C) the costs of production are held constant.
(D) the capital stock remains fixed while labor varies.
(E) resources are perfect substitutes.
10. An increase in the taxes a firm must pay will
(A) cause a firm's revenues to decrease.
(B) shift the firm's cost curve down.
(C) shift the firm's cost curve up.
(D) have no effect on the firm's cost of doing business.
11. In a perfectly competitive market, which statement is false?
(A) The average revenue curve the firm faces is higher than the marginal revenue curve it faces.
(B) The demand curve the firm faces is also its average revenue curve.
(C) A representative firm is a typical, or "average" firm.
(D) The firm's short-run supply curve is its marginal cost curve.
(E) The firm maximizes profits by producing where marginal cost is equal to marginal revenue.
12. The profit-maximizing condition for a competitive firm is to produce that level of output at which price equals:
(A) marginal cost. (B) marginal revenue.
(C) total revenue. (D) total cost.
(E) average variable cost.
13. Compared to pure competition, monopoly is inefficient because the monopolist
(A) produces less product than is socially ideal.
(B) expropriates some or all of the buyer's consumer surplus.
(C) charges a price that exceeds marginal cost.
(D) all of the above.
14. If a monopoly is maximizing profits
(A) price will always be greater than average cost.
(B) price will always be greater than marginal cost.
(C) price will always equal marginal cost.
(D) price will always equal marginal revenue.
15. The more successful a firm is in differentiating its product from its competitors' product in a monopolistically competitive market
(A) the more elastic the demand curve facing the firm will be.
(B) the more inelastic the demand curve facing the firm will be.
(C) the more control the firm will have over its price.
(D) (A) and (C)
(E) (B) and (C)
16. Producer surplus differs from profit in that
(A) producer surplus includes fixed costs.
(B) producer surplus includes variable costs.
(C) fixed costs are not relevant to profit.
(D) profit is larger than producer surplus.
(E) profit is the sum of producer and consumer surplus.
17. A firm whose production function displays increasing returns to scale will have a total cost curve that is
(A) a straight line through the origin.
(B) a curve with positive and continually decreasing slope.
(C) a curve with positive and continually increasing slope.
(D) a curve with negative and continually decreasing slope.
18. Which of the following makes economies of scale more likely?
(A) Large variable costs (B) Large startup costs
(C) Large marginal costs (D) little technological development
(E) Labor-intensive production methods
19. The average productivity of labor reaches its maximum
(A) at the point of inflection of the total product line.
(B) where the slope of the total product curve is steepest.
(C) where the slope of the total product curve is zero.
(D) where marginal and average productivity are equal.
20. The marginal product of labor declines because of the law of:
(A) opportunity costs.
(B) declining average product.
(C) diminishing returns.
(D) declining value of marginal product.
(E) diminishing marginal utility.
21. The opportunity cost of holding money is
(A) The real rate of interest.
(B) the inflation rate.
(C) the nominal interest rate.
(D) zero, because money does not cost anything.
(E) one dollar.
22. According to "supply-side" economists, the aggregate supply curve can be shifted to the right by:
(A) higher income taxes. (B) more regulation of industry.
(C) a higher inflation rate. (D) lower income taxes.
(E) a lower inflation rate.

國立中山大學九十學年度碩博士班招生考試試題

科目：經濟學【公事所碩士班】

共 4 頁 第 3 頁

23. Suppose the current equilibrium price for pizza is \$5. If the federal government decides the price of pizza should be set or frozen at \$4, the result of this policy would be
- (A) a shortage, where at the freeze price (\$4) the quantity demanded would exceed the quantity supplied.
 (B) a surplus, where at the freeze price (\$4) the quantity demanded would be less than the quantity supplied.
 (C) that the market would remain in equilibrium but with a larger quantity bought and sold at \$5.
 (D) at the freeze price (\$4) the quantity sold would be greater than the quantity bought.
 (E) at the equilibrium price of \$5, more units would be sold.
24. Expenditures that have already been made and cannot be recovered no matter what choice is made are called:
- (A) marginal costs. (B) sunk costs.
 (C) total costs. (D) opportunity costs.
 (E) external costs.
25. Jacqueline, a brilliant new Ph.D. in economics, has turned down many job offers because she hopes eventually to teach at one of the top ten universities in her field. The type of unemployment she is experiencing is
- (A) frictional.
 (B) structural.
 (C) seasonal.
 (D) cyclical.
 (E) underemployment.
26. The "natural" rate of unemployment is where
- (A) just about everyone is employed.
 (B) unemployment causes no real hardship.
 (C) a further reduction in the unemployment rate tends to be accompanied by rising inflation.
 (D) the trade deficit is roughly zero.
27. Structural unemployment is due to
- (A) technology change or foreign competition.
 (B) normal labor market turnover.
 (C) a slowdown in the pace of economic expansion.
 (D) irresponsible or poor work habits of workers.
28. Which of the following statements about the views of the classical economists is false?
- (a) They believed that any involuntary unemployment had to be a short-term phenomenon.
 (b) They believed that lower interest rates would encourage investment spending.
 (c) They supported an expanded role for government in combating unemployment when it arose.
 (d) They believed that the appearance of labor surpluses would cause wages to fall.
29. Externalities are examples of market failure.
- (A) because all of the costs and benefits of producing a good are reflected in the market price.
 (B) only if they are negative; positive externalities are not market failures.
 (C) because profits are not maximized.
 (D) because losses are minimized.
 (E) because some of the costs and benefits of producing a good are not reflected in the market price.
30. It is generally conceded that used-car prices are below the price for similar cars because "lemons" are more likely to be traded in than problem-free cars. This highlights the phenomenon known as:
- (A) adverse selection. (B) moral hazard.
 (C) free riding. (D) common property.
 (E) externality.
31. Individuals who use all available information to make forecasts of future prices have
- (A) static expectations (B) rational expectations
 (C) adaptive expectations (D) all of the above
 (E) none of the above.
32. Economic growth is illustrated by:
- (A) a movement toward the production possibilities curve.
 (B) a movement down along the production possibilities curve.
 (C) an movement up along the production possibilities curve.
 (D) a change in the slope of the production possibilities curve.
 (E) a rightward shift in the production possibilities curve.
33. The theory that people save in good years to provide for extra consumption in bad years is called the
- (A) Keynesian consumption function
 (B) life-cycle hypothesis
 (C) permanent income hypothesis
 (D) a and b
 (E) all of the above.
34. Classical economists believed that if planned investment were greater than planned saving, the interest rate would _____ causing planned saving to _____ and planned investment to _____ until the two were equal.
- (A) rise; decrease; increase
 (B) fall; decrease; increase
 (C) fall; increase; decrease
 (D) rise; increase; decrease
 (E) fall; increase; increase
35. In a model with a proportional income tax, t , real disposable income equals.
- (A) $t \times \text{real GDP}$. (B) $(1 - t) \times \text{real GDP}$.
 (C) $\text{real GDP}/t$. (D) $\text{real GDP}/(1 - t)$
 (E) $\text{real GDP} - (1 - t)$

國立中山大學九十學年度碩博士班招生考試試題

科目：經濟學【公事所碩士班】

共 4 頁 第 4 頁

36. Policy actions that shift the aggregate demand curve in the same direction are
- (A) increases in the money supply and in tax rates.
 - (B) increases in transfer payments and in the money supply.
 - (C) decrease in the money supply and in tax rates.
 - (D) increases in sales of government securities and in transfer payments.
37. When the supply and demand for money are included in the Keynesian model, the spending multiplier is
- (A) unaffected.
 - (B) smaller than when the money market is not included, because rising interest rates increases investment.
 - (C) larger than when the money market is not included, because rising interest rates increase investment.
 - (D) larger than when the money market is not included, because rising interest rates decrease investment.
 - (E) smaller than when the money market is not included, because rising interest rates decrease investment.
38. Which of the following is not a leading economic indicator?
- (A) Construction of new housing
 - (B) Total consumer spending
 - (C) Stock markets index
 - (D) Money supply M1
 - (E) Number of new firms started.
39. The 'crowding out' phenomenon refers to the fact that
- (a) increased government spending can lead to higher interest rates and thereby reduce investment.
 - (b) higher tax rates can lead to lower consumption spending by households and a lower level of equilibrium income.
 - (c) the multiplier effect is smaller for increases in government spending than for increases in investment spending.
 - (d) businesses now provide many of the services households once provided for themselves.
40. Which of the following is considered a liability for a bank?
- (A) U.S. government securities
 - (B) Deposits with the Fed
 - (C) Checkable deposits
 - (D) Consumer and business loans
 - (E) Building and furniture

二 問答與計算 (20%)

In the Keynesian cross, assume that the consumption function is given by

$$C=200+0.75(Y-T).$$

Planned investment is 100; government purchases and taxes are both 100.

- a. Graph planned expenditure as a function of income.
- b. What is the equilibrium level of income?
- c. If government purchases increase to 125, what is the new equilibrium income?
- d. What level of government purchases is needed to achieve an income of 1,600?

- 一、目前台灣建設緩慢、財政困窘、產業外移、失業嚴重、人心不定、治安惡化，請簡單分析這些課題間的因果關係，並建議產、官、學、民、媒等各界的應有因應之道。(50%)

- 二、請以您們熟悉(或關心)的地方(縣、市)為例，擬定一國際招商計劃，其中請包括地方的SWOT分析、地方當事人(Stakeholder)分析及具體行動計劃。(50%)

國立中山大學九十學年度碩博士班招生考試試題

科目：微積分【公事所碩士班】甲組

共 | 頁 第 | 頁

Show your work.

1. Find $\frac{dy}{dx}$ where

a. $y = (x - \frac{1}{x})^3$

b. $x^{2/3} + y^{2/3} = 1,$

c. $y = e^{\sqrt{x}} + e^{-\sqrt{x}} \quad x > 0.$ 15%

2. Graph the function $f(x) = 2 - (x-3)^{1/3}$. State all the extrema, critical points, increasing and decreasing, concave up and/or down intervals. 15%

3. Find the following definite and indefinite integrations. 25%

a. $\int_1^4 \frac{dx}{\sqrt{x}}$ b. $\int_0^2 \frac{dx}{(2x-1)^{2/3}}$ c. $\int x \ln x \, dx$

d. $\int \frac{dx}{x^2 + x - 6}$ e. $\int_0^2 \int_{y/2}^1 ye^{x^3} \, dx \, dy$

4. Determine if the following converge. If yes, please find the limit(s). 15%

a. $\lim_{x \rightarrow \infty} \frac{e^{3x} - e^{-3x}}{2x}$ b. $\lim_{x \rightarrow 3^-} \sqrt{x^2 - 9}$ c. $\sum_{n=1}^{\infty} \frac{1}{n + \sqrt{n}}$

5. Give a bound of error when e^x is approximated by its 4th degree Taylor polynomial for $-0.5 \leq x \leq 0.5$. 15%

6. 某一小鎮在 1970 年有兩萬五千人，到了 1980 年人口增到三萬人。假設人口呈指數增長增長的速率是常數的話 (grow exponentially with a constant rate)，那麼到 2010 年此一小鎮會有多少人？ 15%

國立中山大學九十學年度碩博士班招生考試試題

科目：統計學【公事所碩士班】乙組

共 4 頁 第 1 頁

選擇題(每題五分)

1. The ordinal scale of measurement
 - A. Has a meaningful zero point.
 - B. Is based on ranks.
 - C. Cannot assume negative values.
 - D. None of the above.

2. In a positively skewed distribution which of the measures of central tendency is the largest?
 - A. Mean
 - B. Median
 - C. Mode
 - D. Cannot tell from the information given.

3. A population
 - A. Must refer to people.
 - B. Is a collection of individuals, objects, or measurements.
 - C. Must be a large number of values.
 - D. None of the above.

4. The mean of all the sample means and the population mean will
 - A. Always be normally distributed.
 - B. Characterized by the standard error of the mean.
 - C. Always be equal.
 - D. None of the above.

5. In which of the following distributions is the probability of a success usually small?
 - A. Binomial
 - B. Hypergeometric
 - C. Poisson
 - D. All distributions

6. The difference between calculating the sample mean and the population mean is
 - A. We rank the observations and select the middle value for the population
 - B. We divide the sum of the observations by $n - 1$ instead of n .
 - C. In the symbols only.
 - D. There are no differences.

7. To conduct a test of hypothesis for dependent samples we assume that
- A. The distribution of the difference between the paired observations is normal.
 - B. Both samples are at least 30.
 - C. The samples are unrelated.
 - D. All of the above.
8. The t distribution is used when the population distribution is normal and
- A. The population standard deviation is also known
 - B. When the sample size is more than 30.
 - C. When sample size is less than 30 and the population standard deviation is unknown.
 - D. Both A and B are correct.
9. The sample coefficient of correlation
- A. Has the same sign as the slope.
 - B. Can range from -1.00 up to 1.00.
 - C. Is also called Pearson's r .
 - D. All of the above.
10. Which of the following is not an assumption required for ANOVA?
- A. The populations are normally distributed.
 - B. The populations have equal standard deviations.
 - C. The samples are independent.
 - D. All of the above.
11. Which of the following is not a characteristic of the F distribution?
- A. It is a discrete distribution.
 - B. It cannot be negative.
 - C. It is based on two sets of degrees of freedom.
 - D. All of the above.
12. Which of the following is not a necessary condition for regression analysis?
- A. The Y values are independent.
 - B. The standard deviation of each of the conditional distributions must be the same.
 - C. The slope of the regression line is positive (increasing).
 - D. For each X value, there is a group of Y values and these Y values are normally distributed.

國立中山大學九十學年度碩博士班招生考試試題

科目：統計學【公事所碩士班】乙組

共 4 頁 第 3 頁

13. In testing the significance of individual regression coefficients

- A. The test statistic is the t distribution.
- B. We test the independent variables individually.
- C. We usually delete the variables where the null hypothesis is not rejected.
- D. All of the above.

計算題

14. A research organization is making a study of the selling price of home computers. There are 45 computers in the study. How many classes would you recommend? Why?(5%)

15. Refer to the following multiple regression output. (16%)

Predictor	Coefficient	St Dev	T	P
Constant	-0.0916	0.1543	-0.59	0.560
X_1	-0.0069	0.1754	-0.04	0.969
X_2	0.0902	0.2221	0.41	0.689
X_3	-0.1381	0.1326	-1.04	0.310
X_4	-0.2273	0.1488	-1.53	0.142

Analysis of Variance

Source	DF	SS	MS	F Regression	4
	2.7907	0.6977	1.31		
Error	20	10.6793	0.5340		
Total	24	13.4700			

- a. How many independent variables are in this study?
- b. What is the sample size?
- c. Determine the multiple standard error of estimate.
- d. Determine the coefficient of determination.

國立中山大學九十學年度碩博士班招生考試試題

科目：統計學【公事所碩士班】乙組

共4頁第4頁

16. 某公司 300 位員工各種年齡層對公司新產品顏色的偏好資料如下表，請以一種以上的分析方法回答問題：“該公司員工年齡與新產品顏色喜好是否相關？”
(請詳細描述解題方法但無須真正計算出結果)(14%)

	白色	紅色	綠色	藍色	其他	合計
30 歲以下	13	22	8	6	4	53
30~39 歲	68	30	18	8	21	145
39 以上	34	8	44	7	9	102
合計	115	60	70	21	34	300

國立中山大學九十學年度碩博士班招生考試試題

科目：行政法【公事所碩士班】丙組

共 2 頁 第 1 頁

- 一、舉例說明何謂平等原則。(25%)
- 二、行政程序法何時開始實施？試舉四例說明其施行後對行政機關之衝擊(25%)
- 三、試從公務員特別權力義務關係及行政處分之定義，說明被記大過之公務員，在法律上有何救濟管道？(50%)

國立中山大學九十學年度碩博士班招生考試試題

科目：都市與環境規劃概論【公事所碩士班】丁組

共 | 頁 第 | 頁

本科目共有三大題，共計 100 分

一、解釋名詞（50%），每一小題請在 50 字以內回答。

1. 環境敏感地區
2. 生態足跡 (ecological footprint)
3. 邊緣城市 (edge cities)
4. 市地重劃
5. 疊合分析 (overlay analysis)
6. 知識經濟 (knowledge economy)
7. 侵入-承繼循環 (invasion-succession cycle)
8. 綠覆率
9. 外部性 (externalities)
10. 稅金增額融資 (tax increment financing, TIF)

二、近年來，「城市國際化」、「地區/都市行銷」之觀點已經成為地方政府之施政理念，請舉一個您熟悉的地方政府（縣、市、鄉、鎮）為例，就上述理念擬定該地區之最適策略三項，並說明理由。（15%）

三、「核四案」終於落幕，政府也決定恢復興建。身為環境規劃者，請你回答下列二題：

1. 請就產業與能源政策因素提出你「是否支持核四案？」之政策說帖。（20%）
2. 「公投救核四」是否真正可行？請申論之。（15%）

國立中山大學九十學年度碩博士班招生考試試題

科目：公共事務個案分析【公事所碩士班】戊組

共 / 頁 第 / 頁

注意：各題分數在[]內，簡答題每題回答字數不得超過一頁。

1. 本年4月初在南投信義鄉被發現遭大批殺害的保育動物中，有一種動物是_____鹿。[5]
2. 您認為這個殺鹿問題是那些因素造成的？[15]
3. 您認為政府應採取怎樣的政策或那些策略來遏阻類似的事件？[20]
4. 據媒體披露，近半年來國內自殺案件數有上升的趨勢。假設您要研究這個問題，您會如何試圖瞭解或檢驗此一自殺趨勢是否屬實？[20]
5. If the aforementioned trend is real, how would you investigate and analyze its causes? (In your answer, do not go too far into statistical methods)[20]
6. 依您目前的瞭解，您認為政府應採取怎樣的政策或那些策略來減少自殺的發生？[20]