

1. (20 points) Evaluate the following limits.

$$(a) y = \lim_{x \rightarrow 2} \frac{1}{x-2} \quad (b) y = \lim_{x \rightarrow 3} \frac{(x-3)^2}{x-3}$$

2. (10 points) Is the function  $y = -4x^2 + x + 2$  strictly concave or convex? Explain why.

3. (10 points) Find the partial derivatives, second partial derivatives, and the cross partial derivative of the following function.

$$y = 2x_1 \ln x_2 - x_2^{-1}.$$

4. (20 points) A company manufactures and sells  $x$  television sets per month. The monthly costs and price-demand equations are

$$C(x) = 48,000 + 80x,$$

$$p = 200 - \frac{x}{30}, \quad 0 \leq x \leq 6,000.$$

(a) Find the maximum profit, the production level that will realize the maximum profit, and the price the company should charge for each television set.

(b) If the government decides to tax the company \$20 for each set it produces, how many sets should the company manufacture each month in order to maximize its profit? What is the maximum profit? What should the company charge for each set?

5. (20 points) Evaluate the integrals in the following problems:

$$(a) \int (x^2 + 1)^2 x dx \quad (b) \int (e^{2x} - 2x)^2 (e^{2x} - 1) dx$$

6. (20 points) In the following problems, find the derivative and simplify:

$$(a) \frac{d}{dx} \frac{\ln(x+3)}{e^{2x}} \quad (b) \frac{d}{dx} e^{-2x^3+x^2+4}$$

# 國立中山大學九十三年度轉學生招生考試試題

科目：政治學【政經系二年級】

共 ( ) 頁 第 ( ) 頁

以下申論題共 4 題，每題各 25 分，請詳答

- 1、請分析總統制、內閣制與半總統制等政治制度之異同，並試舉例，說明其運作過程可能出現的問題。
- 2、「自由與民主將是人類文明最終奉行的真理與價值」——你是否同意以上說法，請由理論與實例說明原因。
- 3、「政治人物訴求民族主義是不道德的」——你是否同意以上說法？請由理論與實例說明之。
- 4、請試解析，在政治意識型態的光譜，有哪些不同的主張與信仰。

# 國立中山大學九十三年學年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 8 頁 第 1 頁

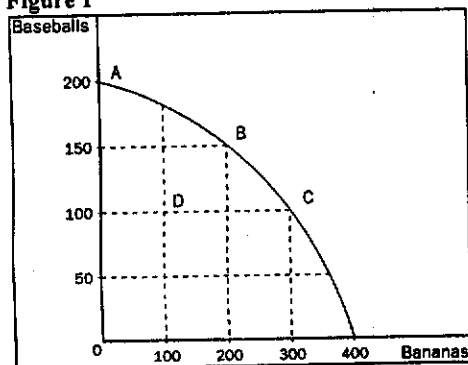
## Economics

### Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

1. Each of the following statements about trade is true EXCEPT
  - a. Trade increases competition.
  - b. One country wins and one country loses.
  - c. The United States can benefit from trade with any country.
  - d. Trade allows people to buy a greater variety of goods and services at lower cost.

Figure 1



2. Refer to Figure 1. The movement from point C to point D was most likely caused by
  - a. unemployment.
  - b. a decrease in society's preference for bananas.
  - c. fewer resources available for production.
  - d. All of the above are correct.
3. John Maynard Keynes referred to economics as an easy subject,
  - a. at which very few excel.
  - b. but not as easy as philosophy or the pure sciences.
  - c. which very few can enjoy.
  - d. which deals primarily with common sense.
4. An example of a perfectly competitive market would be the
  - a. cable TV market.
  - b. soybean market.
  - c. new car market.
  - d. blue jean market.
5. Which of the following is NOT a determinant of demand?
  - a. the price of a resource
  - b. the price of a complementary good
  - c. the price of the good next month
  - d. the price of a substitute good
6. A table that shows the relationship between the price of a good and the quantity demanded is called a
  - a. demand table.
  - b. demand schedule.
  - c. price-quantity table.
  - d. quantity demanded schedule.

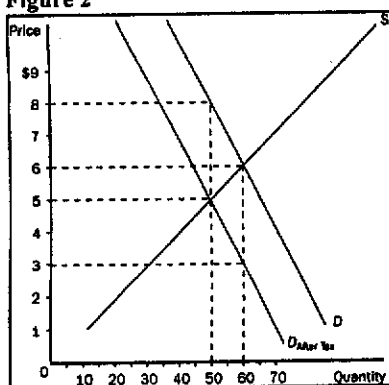
# 國立中山大學九十三年學年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 2 頁 第 2 頁

7. If a car manufacturer purchases new labor-saving technology for its assembly line, we would NOT expect
  - a. less labor to be used.
  - b. the supply of cars produced to increase.
  - c. costs to the firm to fall.
  - d. the price of cars to be increased by the firm.
8. Music compact discs are normal goods. What will happen to the equilibrium price and quantity of music compact discs if musicians accept lower royalties, compact disc players become cheaper, more firms start producing music compact discs and music lovers experience an increase in income?
  - a. Price will fall and the effect on quantity is ambiguous.
  - b. Price will rise and the effect on quantity is ambiguous.
  - c. Quantity will fall and the effect on price is ambiguous.
  - d. Quantity will rise and the effect on price is ambiguous.
9. Suppose the government increases the tax on gasoline in order to raise revenue. Since raising the gasoline tax would increase the price of gasoline, the government must be assuming that the
  - a. demand for gasoline is price elastic.
  - b. demand for gasoline is price inelastic.
  - c. demand for gasoline is price unit-elastic.
  - d. tax on gasoline will not affect the consumption of gasoline.

Figure 2



10. Refer to Figure 2. The price sellers receive after the tax is imposed is
  - a. \$8.00.
  - b. \$6.00.
  - c. \$5.00.
  - d. \$3.00.
11. The burden of a tax placed on a product
  - a. depends on the supply and demand of that product.
  - b. depends on how lawmakers decide the burden should be placed.
  - c. usually falls more heavily on the buyer.
  - d. usually falls more heavily on the seller.
12. When a market is in equilibrium, which of the following would not be correct?
  - a. The price determines which buyers and sellers participate in the market.
  - b. Those buyers who value the good more than the price choose to buy the good.
  - c. Those sellers whose costs are less than the price choose to produce and sell the good.
  - d. Consumer surplus will be equal to producer surplus.

# 國立中山大學九十三年學年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 8 頁 第 3 頁

13. To fully understand how taxes affect economic well-being, we must
  - a. assume that economic well-being is not affected if all tax revenue is spent on goods and services for the American public.
  - b. know the dollar amount of all taxes raised in the country each year.
  - c. compare the reduced welfare of buyers and sellers to the amount of government revenue raised.
  - d. compare the expenditures of the 50 state governments with that of the federal government.
14. The amount of deadweight loss from taxes depends on
  - a. the price elasticity of demand and supply.
  - b. how much of the tax revenue the government plans to spend.
  - c. the product the government is planning to tax.
  - d. All of the above are correct.
15. One negative aspect of Henry George's land tax today would be that
  - a. the loss to landowners would be greater than the government revenue raised.
  - b. the deadweight loss would be much greater than that from other taxes.
  - c. the tax would not raise enough revenue to pay for government spending.
  - d. it would distort economic incentives.
16. Which of the following is the best statement about markets?
  - a. Markets are usually a good way to organize economic activity.
  - b. Markets are generally inferior to central planning as a way to organize economic activity.
  - c. Markets fail and are therefore not an acceptable way to organize economic activity.
  - d. Markets are a good way to organize economic activity in developed nations, but not in less-developed nations.
17. Dioxin emission that results from the production of paper is a good example of a negative externality because
  - a. self-interested paper firms are generally unaware of environmental regulations.
  - b. there are fines for producing too much dioxin.
  - c. self-interested paper producers will not consider the full cost of the dioxin pollution they create.
  - d. toxic emissions are the only form of an externality.
18. In Singapore, littering fines are strictly enforced. This is an example of a policy
  - a. in which moral codes and social sanctions reduce the pollution externality.
  - b. that relies on command and control techniques.
  - c. that discriminates against foreigners.
  - d. in which private incentives are used to reduce the pollution externality in Singapore.
19. According to economist Lester Thurow, no city has ever been able to solve its congestion problems by
  - a. imposing tolls.
  - b. building more roads.
  - c. increasing gasoline taxes.
  - d. enforcing traffic laws.
20. Road tolls used to reduce traffic can be desirable because of each of the following EXCEPT
  - a. they charge people based on consumption.
  - b. they can help bring usage closer to its optimal level.
  - c. rates can differ according to the time of day.
  - d. the administrative costs are virtually nonexistent.

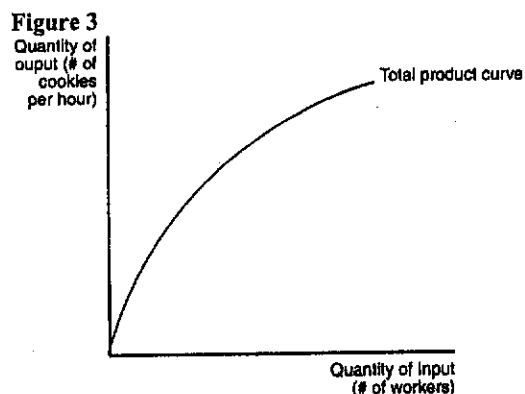
# 國立中山大學九十三年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 8 頁 第 4 頁

21. Proposals to use road tolls in an effort to reduce traffic congestion are often rejected by the public because
  - a. there is no longer sufficient government intervention.
  - b. they allow the rich to drive more than the poor.
  - c. they tax only those who chose to drive on the toll roads.
  - d. All of the above are correct.
22. The ocean remains one of the largest unregulated resources for each of the following reasons EXCEPT
  - a. many countries have access to the ocean.
  - b. it is difficult to get international cooperation among countries that hold different values.
  - c. the oceans are so vast that enforcing any agreements would be difficult.
  - d. the international organization formed to patrol the oceans is totally ineffective.
23. A family's income tax liability is
  - a. a standard percentage of all income earned.
  - b. determined by wage income rather than dividend and interest income.
  - c. based on total income.
  - d. usually the same from year to year.
24. The most efficient tax possible is a
  - a. marginal income tax.
  - b. lump-sum tax.
  - c. consumption tax.
  - d. Corporate profit tax.
25. Total revenue equals
  - a. total output multiplied by price per unit of output.
  - b. total output divided by profit.
  - c. (total output multiplied by sales price) - inventory surplus.
  - d. (total output multiplied by sales price) - inventory shortage.

The figure below depicts a production function for a firm that produces cookies. Use the figure to answer the following questions.



26. Refer to Figure 3. As the number of workers increases,
  - a. total output increases, but at a decreasing rate.
  - b. marginal product increases, but at a decreasing rate.
  - c. marginal product increases at an increasing rate.
  - d. total output decreases.

# 國立中山大學九十三年學年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 8 頁 第 5 頁

27. Some costs do not vary with the quantity of output produced. Those costs are called
  - a. marginal costs.
  - b. average costs.
  - c. fixed costs.
  - d. incurred costs.
28. Diseconomies of scale occur when
  - a. average fixed costs are falling.
  - b. average fixed costs are constant.
  - c. long-run average total costs rise as output increases.
  - d. long-run average total costs fall as output increases.
29. The deadweight loss that is associated with a monopolistically competitive market is a result of
  - a. price falling short of marginal cost in order to increase market share.
  - b. price exceeding marginal cost.
  - c. operating in a regulated industry.
  - d. excessive advertising costs.
30. Which of the following statements is false?
  - a. The typical monopolistically competitive firm could reduce its average total cost if it produced more output.
  - b. Monopolistically competitive firms advertise in order to increase the elasticity of the demand curve they face.
  - c. Expensive advertising might help consumers if it is a signal that the product is good.
  - d. Brand names acquired at great cost might help consumers by assuring quality.
31. The marginal product of any factor of production depends on
  - a. the quantity of the factor used.
  - b. the price of the final good.
  - c. the demand for the final good.
  - d. All of the above are correct.
32. A natural antidote to employer discrimination in market economies is the
  - a. threat of judicial review.
  - b. profit motive.
  - c. political process.
  - d. union movement.

Use the following information to answer the following questions.

### Scenario

Assume that the labor market for barbers is competitive and that it is differentiated into two groups: those who are bald (or going bald) and those who have a full head of hair. Assume that the barbers in this market have identical hair-cutting ability regardless of whether they are bald or not. Currently the equilibrium wage in the bald barber market is lower than that in the non-bald market. Further assume that the market for haircuts is competitive.

33. Refer to Scenario. If some consumers in the market for haircuts have a strong preference for having their hair cut by a barber who is not going bald,
  - a. the difference in wages will eventually disappear since a haircut is a homogeneous good.
  - b. barbershops that hire barbers with hair will be able to charge a higher price for a haircut to those consumers who have a strong preference for barbers with hair.
  - c. barbershops that hire barbers with hair will always be much more profitable.
  - d. barbershops that hire barbers with hair will always be much more profitable.

# 國立中山大學九十三年學年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 8 頁 第 6 頁

34. When measuring income distribution, the income share of the top fifth of all families is
  - a. over 50 percent.
  - b. about 10 times the income of the bottom fifth.
  - c. around 25 percent.
  - d. not much different from the income of the top 5 percent.
35. When the price of pizza falls, the substitution effect, for normal goods Pepsi and pizza, causes
  - a. the consumer to feel richer, so the consumer buys more Pepsi.
  - b. the consumer to feel richer, so the consumer buys less Pepsi.
  - c. Pepsi to be relatively more expensive, so the consumer buys less Pepsi.
  - d. Pepsi to be relatively less expensive, so the consumer buys less Pepsi.
36. An optimizing consumer will select the consumption bundle in which the
  - a. ratio of total utilities is equal to the relative price.
  - b. ratio of income to price equals the marginal rate of substitution.
  - c. marginal rate of substitution is equal to the relative price.
  - d. marginal rate of substitution is equal to income.
37. Many things that society values, such as good health, high-quality education, enjoyable recreation opportunities, and desirable moral attributes of the population, are not measured as part of GDP.
  - a. Therefore, GDP is not a useful measure of society's welfare.
  - b. However, GDP is still a useful measure of society's welfare because providing these other attributes is the responsibility of government.
  - c. However, GDP is still a useful measure of society's welfare because it measures a nation's ability to purchase the inputs that can be used to help produce the things that contribute to welfare.
  - d. However, GDP is still the best measure of society's welfare because these other values cannot actually be measured.
38. When the overall level of prices in the economy is increasing, we say that the economy is experiencing
  - a. economic growth.
  - b. inflation.
  - c. unemployment.
  - d. deflation.
39. Which change in the price index shows the greatest rate of inflation: 100 to 110, 150 to 165, or 180 to 198?
  - a. 100 to 110
  - b. 150 to 165
  - c. 180 to 198
  - d. All changes show the same rate of inflation.
40. Municipal bonds pay a
  - a. low rate of interest because of their high-default risk and because the interest they pay is subject to federal income tax.
  - b. low rate of interest because of their low-default risk and because the interest they pay is not subject to federal income tax.
  - c. high rate of interest because of their high-default risk and because federal taxes must be paid on the interest they pay.
  - d. high rate of interest because of their low-default risk and because the interest they pay is not subject to federal income tax.
41. A higher interest rate induces people to
  - a. save more, so the supply of loanable funds slopes upward.
  - b. save less, so the supply of loanable funds slopes downward.
  - c. invest more, so the supply of loanable funds slopes upward.
  - d. invest less, so the supply of loanable funds slopes downward.



# 國立中山大學九十三年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 8 頁 第 7 頁

42. As the interest rate rises, the present value of future revenues from investment projects
  - a. rise, so investment spending rises.
  - b. fall, so investment spending rises.
  - c. rise, so investment spending falls.
  - d. fall, so investment spending falls.
43. Consumers decide to buy more computers and fewer typewriters. As a result, computer companies expand production while typewriter companies lay-off workers. This is an example of
  - a. structural unemployment created by efficiency wages.
  - b. cyclical unemployment created by a recession.
  - c. frictional unemployment created by a sectoral shift in demand.
  - d. None of the above are correct.
44. The banking system has \$20 million in reserves and has a reserve requirement of 20 percent. The public holds \$20 million in currency. Bankers did not use to hold any excess reserves, but difficult economic times make them decide that it is prudent to hold 25 percent of deposits as reserves. At the same time, the public decides to deposit \$6.7 million in currency into the banking system. Other things equal, what must the Fed do to bank reserves to keep the money supply the same?
  - a. reduce reserves by \$6.7 million
  - b. reduce reserves by \$5 million
  - c. increase reserves by \$3 million
  - d. No action by the Fed is necessary.
45. The Fed can directly protect a bank during a bank run by
  - a. increasing reserve requirements.
  - b. selling government bonds to the bank.
  - c. lending reserves to the bank.
  - d. doing any of the above.
46. Today, bank runs are
  - a. uncommon because of the high required reserve ratio.
  - b. uncommon because of FDIC deposit insurance.
  - c. common because of the low required reserve ratio.
  - d. common because the FDIC is nearly bankrupt.
47. Jill uses some previously obtained euros to purchase a bond issued by a French vineyard. This transaction
  - a. increases U.S. net capital outflow by more than the value of the bond.
  - b. increases U.S. net capital outflow by the value of the bond.
  - c. does not change U.S. net capital outflow.
  - d. decreases U.S. net capital outflow.
48. In 2002 it looked like the Argentinean government might default on its debt (which eventually it did), the open-economy macroeconomic model predicts that this should have
  - a. raised Argentinean interest rates and caused the Argentinean currency to appreciate.
  - b. raised Argentinean interest rates and caused the Argentinean currency to depreciate.
  - c. lowered Argentinean interest rates and caused the Argentinean currency to appreciate.
  - d. lowered Argentinean interest rates and caused the Argentinean currency to depreciate.

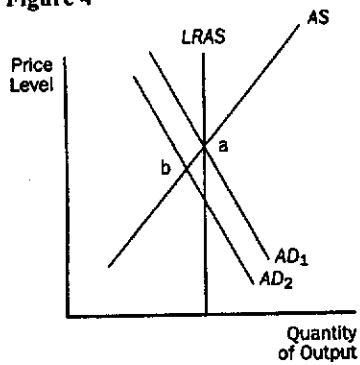
國立中山大學九十三年學年度轉學生招生考試試題

科目：經濟學【政經系二年級】

共 8 頁 第 8 頁

For the following questions, use the diagram below:

Figure 4



49. Refer to Figure 4. Which of the following is true?
- a. Unemployment rises as the economy moves from a to b.
  - b. Either fiscal or monetary policy could be used to move the economy from b to a.
  - c. If the economy is left alone, then as the economy moves from b to long-run equilibrium, the price level will fall farther.
  - d. All of the above are correct.
50. When Congress reduces spending in order to balance the budget, it needs to consider
- a. both the short-run effects on aggregate demand and aggregate supply, and the long-run effects on saving and growth.
  - b. only the short-run effects on aggregate demand and aggregate supply.
  - c. only the long-run effects on saving and growth.
  - d. the long-run effects on aggregate demand and aggregate supply.