

考試科目	經濟學	系別	風管系	考試時間	7月9日上午第二節 星期六
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本科目之選擇題請在答案卡上作答，否則不予計分。

1

單選題每題三分

1. If the interest rate is 10% and cash flows are \$1,000 at the end of year one and \$2,000 at the end of year two, then the present value of these cash flows is
  - a) \$2,562.
  - b) \$3,200.
  - c) \$439.
  - d) \$3,000.
2. Which of the following is an implicit cost to a firm that produces a good or service?
  - a) labor costs.
  - b) costs of operating production machinery.
  - c) foregone profits of producing a different good or service.
  - d) costs of renting or buying land for a production site.
3. As more firms enter an industry
  - a) accounting profits increase.
  - b) economic profits decrease.
  - c) prices rise.
  - d) none of the above.
4. Changes in the price of good A lead to:
  - a) a change in demand of good A.
  - b) a change in demand of good B.
  - c) a change in the quantity demanded of good A.
  - d) a change in the quantity demanded of good B.
5. If A and B are complements, an increase in the price of good A would:
  - a) have no effect on the quantity demanded of B.
  - b) lead to an increase in demand for B.
  - c) lead to a decrease in demand for B.
  - d) none of the above.
6. A firm will maximize the present value of future profits by maximizing current profits when:
  - a) the growth rate in profits is constant.
  - b) the growth rate in profits is larger than the interest rate.

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考試科目	經濟學	系別	風管系	考試時間	7月9日上午第二節 星期六
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國立政治大學圖書館

2

c) the interest rate is larger than the growth rate in profits and both are constant.  
d) the growth rate and interest rate are constant and equal.

7. The demand for good X has been estimated by  $Q_x^d = 12 - 3P_x + 4P_y$ . Suppose that good X sells at \$2 per unit and good Y sells for \$1 per unit. Calculate the own price elasticity.

a) -0.2.  
b) -0.3.  
c) -0.4.  
d) -0.5.  
e) -0.6.

8. If marginal costs exceed marginal benefits, then:

a) the firm ends up with a net loss.  
b) the firm's average costs exceed average benefits.  
c) the firm should decrease its production level.  
d) none of the above.

9. The demand curve for a good is horizontal when it is:

a) a perfectly inelastic good.  
b) a unitary elastic good.  
c) a perfectly elastic good.  
d) an inferior good.

10. Which of the following is true?

a) Indifference curves may intersect.  
b) At a point of consumer equilibrium, the MRS equals 1.  
c) If income increases, a consumer will always consume more of a good.  
d) None of the above are true.

11. What is/are the important things that must be developed when characterizing consumer behavior?

a) consumer preferences.  
b) individual goals of the firm.  
c) consumer opportunities.  
d) b and c.  
e) a and c.



考試科目	經濟學	系別	風管系	考試時間	7月9日上午第二節 星期三
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12. What is the maximum amount of good Y that can be purchased if X and Y are the only two goods available for purchase and  $P_x = \$5$ ,  $P_y = \$10$ ,  $X = 20$ , and  $M = 500$ ?

- a) 40.
- b) 25.
- c) 50.
- d) 75.

13. Suppose the production function is given by  $Q = 3K + 4L$ . What is the average product of capital when 10 units of capital and 10 units of labor are employed?

- a) 3.
- b) 4.
- c) 7.
- d) 45.

14. Which of the following conditions is true when a producer minimizes the cost of producing a given level of output?

- a) The MRTS is equal to the ratio of input prices.
- b) The marginal product per dollar spent on all inputs are equal.
- c) The marginal products of all inputs are equal.
- d) a and b.

15. The recipe that defines the maximum amount of output that can be produced with K units of capital and L units of labor is the:

- a) Production function.
- b) Technological constraint.
- c) Research and development schedule.
- d) Total product.

16. You are the manager of a monopoly that faces a demand curve described by  $P = 230 - 20Q$ . Your costs are  $C = 5 + 30Q$ . The profit-maximizing price is

- a) 150.
- b) 90.
- c) 130.
- d) 110.

考試科目	經濟學	系別	風管系	考試時間	7 月 9 日 上午 第二節 星期 六
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17. In the long-run, monopolistically competitive firms:
- charge prices equal to marginal cost.
  - have excess capacity.
  - produce at the minimum of average total cost.
  - b. and c.
18. The primary difference between Monopolistic Competition and Perfect Competition is
- the ease of entry and exit into the industry.
  - the number of firms in the market.
  - all of the above.
  - none of the above.
19. Which of the following statements concerning monopoly is NOT true?
- A market may be monopolistic because there are some legal barriers.
  - A monopoly has market power.
  - A monopoly is always undesirable.
  - There is some deadweight loss in a monopolistic market.
20. Economies of scale exist whenever:
- average total costs decline as output increases.
  - average total costs increase as output increases.
  - average total costs are stationary as output increases.
  - both b and c.
21. You are a manager in a perfectly competitive market. The price in your market is \$14. Your total cost curve is  $C(Q) = 10 + 4Q + 0.5 Q^2$ . What price should you charge in the short-run?
- \$12.
  - \$14.
  - \$16.
  - \$18.
22. Holding everything else constant,
- if an asset's risk rises relative to that of alternative assets, the demand will fall.
  - the more liquid an asset, relative to alternative assets, the greater will be the demand.



考試科目	經濟學	系別	風管系	考試時間	2月9日上午第二節 星期六
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C) the lower the expected return relative to alternative assets, the greater will be the demand.

D) all of the above.

E) only (a) and (b) of the above.

23. When an economy grows out of a recession, normally the demand for bonds \_\_\_\_\_ and the supply of bonds \_\_\_\_\_.

A) increases; increases

B) increases; decreases

C) decreases; decreases

D) decreases; increases

24. When prices in the art market become less uncertain,

A) the demand curve for bonds shifts to the left and the interest rate rises.

B) the demand curve for bonds shifts to the left and the interest rate falls.

C) the demand curve for bonds shifts to the right and the interest rate falls.

D) the supply curve for bonds shifts to the right and the interest rate falls.

25. An increase in the expected rate of inflation causes the demand for bonds to \_\_\_\_\_ and the demand curve to shift to the \_\_\_\_\_.

A) fall; right B) fall, left C) rise; right D) rise; left

26. Factors that can cause the supply curve for bonds to shift to the right include

A) an expansion in overall economic activity.

B) an increase in expected inflation.

C) an increase in government deficits.

D) all of the above.

E) only (a) and (b) of the above.

27. In Keynes's liquidity preference framework,

A) the demand for bonds must equal the supply of money.

B) the demand for money must equal the supply of bonds.

C) an excess demand of bonds implies an excess demand for money.

D) an excess supply of bonds implies an excess demand for money.

28. According to the monetarists an increase in the money supply, other things equal, shifts the aggregate \_\_\_\_\_ curve to the \_\_\_\_\_.

A) demand; right B) demand; left C) supply; left D) supply; right

29. A change in workers expectations about the aggregate price level will cause



考試科目	經濟學	系別	風管系	考試時間	7月9日上午第二節 星期六
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6

- A) the aggregate demand curve to shift. B) the aggregate supply curve to shift.  
C) the production function to shift. D) the transformation function to shift.
30. While both monetarists and Keynesians view the aggregate demand curve as downward-sloping, monetarists argue that  
A) changes in government spending and taxes are the only factors causing the aggregate demand curve to shift.  
B) a change in the quantity of money is the primary factor causing the aggregate demand curve to shift.  
C) changes in government spending and taxes, in addition to changes in the money supply, cause the aggregate demand curve to shift.  
D) a change in the quantity of money will have no effect on the aggregate demand curve.
31. Friedman's modern quantity theory of money concludes that changes in aggregate spending are primarily determined by changes in  
A) government spending and taxes. B) the velocity of money.  
C) interest rates. D) the money supply.
32. Keynesians  
A) see wages as being sufficiently flexible so that the wage and price adjustment process is reasonably rapid.  
B) see little need for active government policy to restore the economy to full employment when unemployment is high.  
C) advocate the use of a "rule" in which the money supply grows at a constant rate.  
D) hold all of the above views.  
E) hold none of the above views.
33. If workers demand and receive higher real wages (a successful wage push), the cost of production \_\_\_\_\_ and the aggregate supply curve shifts \_\_\_\_\_.  
A) rises; left B) rises; right C) falls; left D) falls; right

考試科目

統計學

系別

國管系

考試時間

七月九日上午第[四]節  
星期六

國立政治大學圖書館

1. suppose you are ask to estimate a linear regression model

$$Y_i = \beta_0 + \beta_1 X_{1i} + \varepsilon_i$$

Base on the following data:

$$\sum_{i=1}^{10} x_i y_i = 16800, \quad \sum_{i=1}^{10} x_i^2 = 33000, \quad \sum_{i=1}^{10} y_i^2 = 8890, \quad \sum_{i=1}^{10} x_i = 170, \quad \sum_{i=1}^{10} y_i = 1110$$

Where  $y_i$  and  $x_i$  are deviations from the mean values of  $Y$  and  $X$ . (30 分)

- What are the values of  $\hat{\beta}_0$  and  $\hat{\beta}_1$ ?
  - What are the values of the variance and standard error of  $\hat{\beta}_1$ ?
  - What are the values of the coefficient of determination?
  - What is the  $F$  value?
2. Given the data of two independent samples  
 $\bar{X}_1 = 3.27, S_1^2 = 1.698, n_1 = 21$ , and  $\bar{X}_2 = 2.53, S_2^2 = 1.353, n_2 = 25$  (30 分)
- In what kind situations, the  $F$  statistic of ANOVA can be used to test the null hypotheses that  $\mu_1 = \mu_2$ ?
  - Using the data sets, compute the ANOVA table.
  - Show that the formula of statistic used in (a) is equal to  $t^2$

Where  $t = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)}{\sqrt{S_p^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$ ,  $S_p^2$  is a pooled variance.

3. The accompanying table gives the observed number of customers arriving at teller windows each minute at MonChey Bank. Can you conclude that the data have a Poisson distribution ( $\alpha = 0.05$ ). ( $\chi_{0.05}^2(3) = 7.81, \chi_{0.05}^2(4) = 9.49, \chi_{0.05}^2(5) = 11.07$ ) (20 分)

Arrivals	0	1	2	3	4	5	6 or more
Frequency	10	20	40	18	8	0	4

4. Given the following data generated from a matched pairs experiment, test to determine whether we can infer that the mean of population 1 exceeds the mean of population 2 (use  $\alpha = 0.01$ ) (20 分)

Pair	1	2	3	4	5
Sample 1	20	23	15	18	19
Sample 2	17	16	9	19	15

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097