

考試科目	經濟學	系別	國管系	考試時間	7月11日 星期二 第二節
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選擇題請在答案卡上作答，否則不予計分。

- I. Multiple Questions (單選題，每題五分)
- The difference between a monopoly and a competitive firm is mainly that
    - they have differently shaped cost curves.
    - a monopoly can change its output, whereas a competitive firm cannot.
    - with a monopoly, there is a market demand, whereas there is only firm demand with a competitive firm.
    - a monopoly is not concerned with market price.
    - a monopoly can affect market price, whereas a competitive firm cannot.
  - Which of the following is true of a monopoly?
    - Producers sell a product for which there are many substitutes.
    - Producers enjoy complete freedom of entry into and out of the industry.
    - The demand curve facing the producer is the market demand curve.
    - Producers always charge the highest possible price.
    - Producers are price-takers.
  - Suppose a monopoly is producing at an output such that the price elasticity of demand is 0.8. Then it is the case that
    - there is not enough information to reach any conclusion listed.
    - price equals marginal cost.
    - output should be increased.
    - the monopoly is probably maximizing profits.
    - marginal revenue is less than marginal cost.
  - A producer will want to differentiate his or her product somewhat from other producers' similar products because
    - no producer has production facilities exactly like those of other producers.
    - of government trademark protections.
    - different consumers have different wants and needs, and the producer may be able to fill a niche.
    - doing so guarantees that some will buy it.
    - one must be careful not to flatter the competition by copying their product.
  - There is no long-run tradeoff between inflation and unemployment because
    - the aggregate demand curve always shifts back to its baseline position.
    - inflation always returns to the baseline level.
    - unemployment always returns to the natural rate.
    - the Federal Reserve does not allow such a tradeoff.

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- e. potential GDP declines as the rate of inflation increases.
6. If a monopolistic competitor lowers the price of its product,
- it is a signal that the monopolistic competitor is trying to drive its competition out of the market.
  - it is a signal that quality has been reduced.
  - losses will result.
  - some customers will be drawn from its competitors, ceteris paribus.
  - it will not be able to advertise and will lose customers.
7. Which of the following statements is false?
- Like a competitive firm, a monopolistically competitive firm makes a normal profit in the long run.
  - Monopoly and competition are alike in that there is little or no product variety in either type of market.
  - Monopoly and monopolistic competition result in average total cost above the minimum.
  - Monopolistic competition and competition both produce a variety of products as a result of many firms.
  - A monopoly and a monopolistically competitive firm both result in a deadweight loss.
8. Which of the following is true?
- The bond yield is fixed for the life of the bond, but the bond price can vary.
  - The bond yield and bond price are positively related.
  - The bond price is fixed for the life of the bond, but the bond yield can vary.
  - The bond yield and the bond price are inversely related.
  - The bond yield and bond price are both fixed for the life of the bond.
9. Which of the following best describes a risk-averse individual?
- He would rather spend all his money than risk it in investments.
  - He would rather put \$100 in a bank earning 10 percent than put \$100 in a one-year government bond earning 10 percent.
  - He would rather have \$10 than gamble on a coin toss in which heads yields \$20 and tails yields nothing.
  - He would rather put \$100 in a bank at 10 percent interest than put \$100 in a stock with a 10 percent dividend and 50-50 chance of a 25 percent increase or decrease in the value of the stock.

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- e. He does not trust banks.
10. If the exchange rate changes from \$.65 per German mark to \$.57 per German mark, this means the
- supply of German marks has decreased.
  - demand for dollars has increased.
  - supply of dollars has increased.
  - demand for German marks has increased.
  - supply of both dollars and German marks have increased.
11. If purchasing power parity holds, what is the annual rate of change of the domestic price level when the foreign inflation rate is 5 percent per year and the domestic currency is depreciating against the foreign currency at 15 percent per year?
- 0 percent
  - 5 percent
  - 20 percent
  - 15 percent
  - 10 percent
12. If the public believes the government's claim that it will pursue low inflation policies, and the government then turns around and adopts an expansionary policy, then
- the IA line will shift up before the AD curve shifts right.
  - the IA line will shift up after the AD curve shifts right.
  - the IA line will shift down before the AD curve shifts right.
  - the IA line will shift down after the AD curve shifts right.
  - real GDP will not increase.
13. A reduction in real interest rates will cause the demand for new homes to
- increase, which results in an increase in investment expenditures.
  - increase, which results in an increase in consumption expenditures.
  - decrease, which results in a decrease in investment expenditures.
  - decrease, which results in a decrease in consumption expenditures.
  - increase, which will result in an increase in business fixed investment.
14. 若邊際消費傾向為 0.9，稅率為 0.33，政府支出應該增加多少單位，才能讓 GDP 剛好上升 2500 單位？

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- a. 100  
b. 252  
c. 500  
d. 1000

15. 在簡單凱因斯模型下，令  $x$  表所得稅制下的投資乘數， $y$  表定額稅制之下的投資乘數， $z$  表無政府部門下的投資乘數。則下列何者為真。

- a.  $x > y = z$     b.  $y > x = z$     c.  $y > x > z$     d.  $z = y > x$

II. 設好棒棒公司生產函數為  $Y = 10L^{0.6}K^{0.4}$ ，其中  $Y$  代表生產量， $L$  與  $K$  分別代表勞動與資本雇用量。產品價格為 10 元，勞動工資率為 10 元，資本價格為 20 元。利用以上資料，請找出資本與勞動的最佳雇用比例。(13 分)

III. 假設一個經濟是 a. b. c 三個家庭組成，其消費函數分別為

$$C_a = 20 + 0.8Y_d$$

$$C_b = 30 + 0.8Y_d$$

$$C_c = 70 + 0.8Y_d$$

則這個假想的經濟之總合消費函數為何？(12 分)



考試科目	微積分	系 別	風險管理與保險	考試時間	7 月 11 日 星期四 第四節
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選擇題請在答案卡上作答，否則不予計分。

1.  $\int_0^3 \sqrt{9-x^2} dx =$

- A) 0      B)  $\frac{\pi}{4}$       C)  $\frac{9\pi}{4}$       D)  $9\pi$       E) None

(5%)

2.  $\int_0^{2\pi} \sqrt{1-\cos 2\theta} d\theta =$

- A) 0      B)  $\sqrt{2}$       C)  $4\sqrt{2}$       D) 4      E) None

(5%)

3. What is the directional derivative of  $F(x,y) = x^2y+y^3$  at the point (1,2) in the direction from (1,2) to (4,-1)?

- A)  $-\frac{9\sqrt{2}}{2}$       B)  $\frac{9\sqrt{2}}{2}$       C) 27      D) -27      E) None

(5%)

4. What is the equation of the tangent plane to  $z = xy-y^3+x^2$  at the point (1, 2, -5)?

- A)  $4x-11y-z = 0$       B)  $x+2y -5z = 30$       C)  $4x-11y-z = 13$       D)  $4x-11y-z = -13$       E) None

(5%)

5.  $\int \frac{x dx}{\sqrt{1-x^2}} =$

- A)  $\sqrt{1-x^2} + c$       B)  $\ln\sqrt{1-x^2} + c$       C)  $\frac{1}{2}\sqrt{1-x^2} + c$       D)  $\frac{1}{2}\ln\sqrt{1-x^2} + c$

- E)  $-\sqrt{1-x^2} + c$

(5%)

6.  $D_x \int_0^x \int_y^x e^{t^3} dt dy =$

- A)  $e^{x^3}$       B)  $xe^{x^3}$       C) 0      D) Undefined      E) None

(5%)

備 考 試 題 隨 卷 繳 交

命 題 委 員 :

(簽章) 97 年 6 月 19 日

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7.  $\int f'(3f(3t))f'(3t)dt =$

A)  $f(3f(3t))f(3t)+c$     B)  $\frac{1}{3}f(3f(3t))f(3t)+c$     C)  $\frac{1}{3}f(3f(3f(3t)))+c$     (5%)

D)  $\frac{1}{9}f(3f(3t))+c$     E) None

8. The area between  $y = x^2-4$  and  $y = 3x$  on  $[-2,4]$  is

A)  $23\frac{2}{3}$     B) 18    C)  $20\frac{5}{6}$     D) -18    E) None    (5%)

9.  $\lim_{n \rightarrow \infty} (1 - \frac{1}{n^{1/3}})^n$

A)  $e^{-3}$     B)  $e^{-1}$     C) 0    D)  $\infty$     E) Undefined    (5%)

10.  $\sum_{n=0}^{\infty} \frac{1+(-1)^n}{3^n} =$

A) 0    B) 1    C)  $\frac{9}{8}$     D)  $\frac{9}{4}$     E)  $\frac{1}{4}$     (5%)

11. What is the maximum value of  $\int_0^x \int_0^y \sin t \, dt \, dy$  on the interval  $[0, 2\pi]$ ?

A) 0    B)  $\pi$     C)  $2\pi$     D) 1    E) None    (5%)

12.  $y'' + 2y' + y = t$ ,  $y(0) = 0$  and  $y'(0) = 1$ . Then  $y =$

A)  $2e^{-t}+2te^{-t}+t-2$     B)  $te^{-t}$     C)  $2e^t+2te^t+t-2$     D)  $tet$     E) None    (5%)

13. How many discontinuities does  $f(x)$  have?

$$f(x) = \begin{cases} x+1 & x < 2 \\ 2 & 2 \leq x < 3 \\ 2x-1 & 3 \leq x < 4 \\ x+3 & 4 \leq x \end{cases}$$

A) 0    B) 1    C) 2    D) 3    E) 4    (5%)

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14. Evaluate  $\iint_S x \, dx \, dy$  where  $S$  is the region below  $y = x$ , above the  $x$  axis and to the left of  $x = 2$ . (5%)

A) 0      B)  $\frac{1}{3}$       C)  $\frac{8}{3}$       D) 2      E) None

15. The average value of  $t^2$  on  $[1, 4] =$  (5%)

A)  $\frac{t^2}{2}$       B) 7      C) 21      D)  $\frac{9}{2}$       E) None

16. If  $\int_1^2 \frac{f(x)f(\frac{1}{x})dx}{x} = w$ , then  $\int_{\frac{1}{2}}^1 \frac{f(x)f(\frac{1}{x})dx}{x} =$  (5%)

A) 0      B)  $w$       C)  $\frac{1}{2}w$       D)  $2w$       E) None

17. For what values of  $k$  does the following system of equations have a unique solution. (5%)

$$\begin{array}{rcl} x & - & 3z = -3 \\ 2x + ky & - & z = -2 \\ x + 2y & + & kz = 1 \end{array}$$

A)  $k = 2$       B)  $k = -5$       C)  $k = 2, -5$       D)  $k \neq 2, k \neq -5$       E) None

18.  $\int_0^1 \int_{\sqrt{y}}^1 \sqrt{1+x^3} \, dx \, dy =$  (5%)

A)  $\frac{2}{3}(2^{3/2} - 1)$       B)  $\frac{1}{2}(2^{3/2} - 1)$       C)  $\frac{2}{9}(2^{3/2} - 1)$       D)  $2^{1/2} - 1$       E) None

19.  $\int_0^3 \frac{dx}{(x-2)^3} =$  (5%)

A) 0      B)  $-\frac{3}{8}$       C)  $-\frac{1}{2}$       D) Not defined      E) None

20.  $\int_0^5 \int_0^{t^2} e^{xy^2} \, dy \, dx =$  (5%)

A) 0      B)  $e^5 - 1$       C)  $\frac{2}{t^3}(e^{5t^4} - 1)$       D)  $2te^5$       E) None

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