

考試科目	經濟學原理(系列)	經濟系	考試時間	月	日	上午第	節
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## 第一部份 選擇題(共計40%)

1. While a nation's production possibilities boundary will usually shift outward, an inward shift would occur if there was
  - A) a factory that was not being used
  - B) an increase in unemployment
  - C) an earthquake that destroyed productive capacity.
  - D) farmland that was not being planted
2. The excess capacity theorem predicts that firms in a monopolistically competitive industry will
  - A) be forced to operate on the rising portion of the ATC curve
  - B) achieve zero profit equilibrium at an output below the one at which average total cost is minimized.
  - C) earn excess profits in the long run.
  - D) have excess capacity if they produce at the point where  $MC = ATC$ .
3. A factor of production having a perfectly elastic supply curve would earn
  - A) zero economic rent.
  - B) positive economic rent
  - C) both opportunity cost and economic rent.
  - D) a fixed equilibrium price, which could be considered neither opportunity cost nor economic rent.
4. The paradox in the paradox of value arose from
  - A) not understanding the difference between total and marginal values.
  - B) the belief that goods with high total values should command high prices.
  - C) the belief that goods with low total values should command high prices.
  - D) the belief that total values of both necessities and luxuries should be equal
5. The functional distribution of income describes the distribution of income among
  - A) different households in the economy.
  - B) households headed by employed individuals.
  - C) white, black, and Hispanic families
  - D) the owners of the different factors of production
6. Contestable market theory holds that
  - A) oligopolistic firms will engage in overt collusion.
  - B) advertising will not be effective in increasing short-run economic profits in oligopoly.
  - C) economies of scale do not exist in the long run
  - D) potential entry may hold down the profits and prices of an oligopolist
7. When there is a positive externality associated with the production process, which of the following is true?
  - A) To have the socially optimal level of production, a per unit tax should be imposed on the private producer
  - B) Without government intervention the market will produce too much of the good
  - C) Marginal social benefits are less than marginal private benefits.
  - D) A subsidy to producers could increase production toward the optimal level
8. The short run cost curves and the long run cost curves are derived from
  - A) different production functions and the assumption of constant factor prices
  - B) different production functions and the assumption of different factor prices
  - C) the same production function and the assumption of given prices for all factor inputs
  - D) the same production function and the assumption of different factor prices
9. If the demand for a nonrenewable resource is very inelastic, its extraction rate will tend to be
  - A) low now and then rapidly diminish over future years.
  - B) low now and then slowly diminish over future years.
  - C) high now and then rapidly diminish over future years
  - D) high now and then slowly diminish over future years.
10. When one party to a transaction has both the incentive and the ability to shift costs onto the other party
  - A) moral hazard exists.
  - B) an externality exists
  - C) adverse selection exists
  - D) a collective consumption good is being produced

11. When a student finishes college and begins looking for work,
- cyclical unemployment increases.
  - structural unemployment increases.
  - frictional unemployment increases.
  - frictional and cyclical unemployment increase.
12. A decrease in the expected profit rate shifts the \_\_\_\_\_ curve to the left and \_\_\_\_\_ the real interest rate.
- saving supply; lowers
  - investment demand; lowers
  - saving supply; raises
  - investment demand; lowers
13. Which of the following increases both consumption demand and saving supply?
- An increase in the real interest rate.
  - A decrease in future expected income.
  - An increase in net assets.
  - An increase in disposable income.
14. The productivity function shows that an increase in technological progress causes a
- higher level of real GDP per hour of labor at any level of capital per head.
  - constant level of real GDP per hour of labor at any level of capital per head.
  - lower level of real GDP per hour of labor at any level of capital per head.
  - higher level of labor input in production.
15. Ricardian equivalence suggests that the real interest rate with debt financing is
- higher than the real interest rate with higher taxes.
  - the same as the real interest rate with higher taxes.
  - lower than the real interest rate with higher taxes.
  - just as unstable as the real interest rate with money financing.
16. Crowding out is the tendency for
- the per capita benefits of government purchases to decline as a result of population growth.
  - the benefits of government transfer payments to reduce the amount of public capital investment.
  - government debt to drive productive capital from investment markets.
  - the return on private capital investment to exceed that on potential public capital investment.
17. Fiat money
- is worth more in exchange than its intrinsic value.
  - has an intrinsic value exceeding its value in exchange.
  - has a value in exchange that differs from its denoted value as a unit of account.
  - is used as a store of value but not as a means of exchange.
18. According to the quantity theory of money,
- $V/M$  is constant.
  - $V/P$  is constant.
  - $M/P$  is constant.
  - $M/Y$  is constant.
19. Which of the following does NOT cause a demand-pull inflation?
- Increases in government purchases.
  - Increases in net exports.
  - Increases in oil prices.
  - Increases in the money supply.
20. A business cycle is
- the downward trend in real GDP.
  - an irregular fluctuation in real GDP about its trend.
  - the trend increase in real GDP.
  - a periodic and predictable fluctuations in real GDP about its trend.

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## 第二部份 計算問答題(共計 60%)

一. (15%)

設 X 的財貨需求函數為:

$$Q_x^d = 15 - 0.5P_x + 0.2P_y - 0.4P_z + 0.2I$$

其中  $Q_x^d$  和  $P_x$  為 X 之需求量和價格,  $P_y$  和  $P_z$  為財貨 Y 和 Z 之價格, I 為所得。

試回答下列各題:

(a) X 是 Z 的替代品或互補品? 理由。

(b) 若  $P_x = 10$ ,  $P_y = 5$ ,  $P_z = 2.5$ ,  $I = 400$ 

(1) X 是奢侈品嗎? 理由

(2) X 的自身價格需求點彈性為何?

(3) 若  $P_x$  微幅上升, 消費者對 X 之支出會增加或減少? 理由。

(c) 若政府對 Y 財貨課徵銷售稅, 則 X 之價格與交易量會有何變化? 理由。

二. (15%)

政府對自然獨占產業往往採取管制措施。試回答:

(a) 何謂自然獨占?

(b) 分別說明平均成本訂價法, 邊際成本訂價法, 資本報酬率管制法對於經濟效率, 生產者之利潤的影響。

三. (15 分) 假設一個封閉簡單凱恩斯模型可表示如下:

$$Y = C + I + G$$

$$C = 50 + 0.75Y_d$$

$$I = 200$$

$$T = 200$$

$$G = 100$$

其中  $Y$  = 所得,  $Y_d$  = 可支配所得,  $C$  = 消費,  $I$  = 投資,  $G$  = 政府支出,  $T$  = 定額稅。

(a) 試求出均衡所得, 均衡消費與均衡儲蓄水準。

(b) 試求出投資乘數為何? 平均預算乘數為何?

(c) 令充分就業之所得水準  $Y_f = 1000$ , 若政府支出 ( $G$ ) 全部由稅收 ( $T$ ) 融資, 則政府支出應增加或減少多才能使經濟體系達到充分就業?

四. (8 分) 何謂 stagflation? 並以 AD-AS 模型說明之。

五. (7 分) 何謂 iron law of wage? 並以圖形說明之。

國立政治大學圖書館

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There are 5 problems in this part. Each question will count 10% of your total score in this exam.

1. Please prove the Euler's theorem for a differentiable linear homogeneous function.

2. Consider a twice continuously differentiable function  $f: \mathbb{R}^2 \rightarrow \mathbb{R}$  and let  $x, y$  be its both arguments. Denote  $f_x = \frac{\partial f(x,y)}{\partial x}$ ,  $f_y = \frac{\partial f(x,y)}{\partial y}$  and  $f_{xy} = \frac{\partial^2 f(x,y)}{\partial x \partial y}$ .

Prove that if the function  $f$  is linear homogeneous, then we must have

$$\frac{f_x / f_y}{x / y} = \frac{d(x / y)}{d(f_x / f_y)} = \frac{f_x}{f_{xy}}$$

3. Consider a function

$$f(x,y) = k(a x^a + b y^a)^{1/\alpha} \quad \text{where } a + b = 1.$$

Assume that this function  $f$  is arbitrarily-many-times continuously differentiable, draw an iso-value curve (e.g., isoquant or indifference curve) of this function for the case when  $\alpha$  approaches negative infinity. (You must explain why!)

4. Use an example to explain what the implicit function theorem means.

5. Find the extreme values, if any, of the following function (indicate whether maximum or minimum)

$$f(x,y,z) = x^2 - 3xy + 3y^2 + 4yz + 6z^2.$$

6. Evaluate the integrals

1)  $\int_{-\infty}^{\infty} (x+1)e^x dx$  (8%)

2)  $\int_0^1 \int_0^1 \frac{1}{(x^2-x)(y-1)^{3/4}} dy dx$  (8%)

3)  $\int_0^1 \int_0^{1-x} \frac{xz^{3/4}}{4-y} dz dx$  (7%)

7. Find the Maclaurin series for  $f(x) = \ln(1+2x)^2$  and find the series' interval of convergence (15%)

8. Find the volume of the solid in the first octant bounded by the coordinate planes, the cylinder  $x^2 + y^2 = 9$ , and the plane  $z + x = 3$  (12%)