

科目：經濟學

系組：金融與國際企業學系

年級：二

第一部分 單選題 (60%)

1. The producer that requires a smaller quantity of inputs to produce a certain amount of a good, relative to the quantities of inputs required by other producers to produce the same amount of that good,
 - a. has a low opportunity cost of producing that good, relative to the opportunity costs of other producers.
 - b. has a comparative advantage in the production of that good.
 - c. has an absolute advantage in the production of that good.
 - d. should be the only producer of that good.
2. Imagine that in the current year the economy is in long-run equilibrium. Then stock prices rise more than expected and stay high for some time. In the short run what happens to the price level and real GDP?
 - a. Both the price level and real GDP rise.
 - b. Both the price level and real GDP fall.
 - c. The price level rises and real GDP falls.
 - d. The price level falls and real GDP rises.
3. If inflation falls, people choose to put in
 - a. more effort to keep money balances low. When inflation is unexpectedly low it redistributes wealth from lenders to borrowers.
 - b. more effort to keep money balances low. When inflation is unexpectedly low it redistributes wealth from borrowers to lenders.
 - c. less effort to keep money balances low. When inflation is unexpectedly low it redistributes wealth from lenders to borrowers.
 - d. less effort to keep money balances low. When inflation is unexpectedly low it redistributes wealth from borrowers to lenders.
4. In countries that have high minimum wages and require a lengthy and costly process to get permission to open a business,
 - a. reducing either the minimum wage or the time and cost to open a business would have no effect on the long-run aggregate supply curve.
 - b. reducing the minimum wage and the time and cost to open a business would both shift the long-run aggregate supply curve to the right.
 - c. reducing the minimum wage would shift long-run aggregate supply to the right. Reducing the time and cost to open a business would have no effect on the long-run aggregate supply curve.
 - d. reducing the minimum wage would have no effect on the long-run aggregate supply curve. Reducing the time and cost to open a business would shift the long-run aggregate supply curve to the right.
5. If a profit-maximizing monopolist faces a downward-sloping market demand curve, its
 - a. average revenue is less than the price of the product.
 - b. average revenue is less than marginal revenue.
 - c. marginal revenue is less than the price of the product.
 - d. marginal revenue is greater than the price of the product.

※ 注意：1. 考生須在「彌封答案卷」上作答。

2. 本試題紙空白部份可當稿紙使用，試題須隨答案卷繳回。

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6. In order to sell more of its product, a monopolist must
 - a. lobby the government for a subsidy.
 - b. lower its price.
 - c. advertise.
 - d. enact barriers to entry in related markets.
7. Income elasticity of demand measures how
 - a. the quantity demanded changes as consumer income changes.
 - b. consumer purchasing power is affected by a change in the price of a good.
 - c. the price of a good is affected when there is a change in consumer income.
 - d. many units of a good a consumer can buy given a certain income level.
8. Cross-price elasticity of demand measures how
 - a. the price of one good changes in response to a change in the price of another good.
 - b. the quantity demanded of one good changes in response to a change in the quantity demanded of another good.
 - c. the quantity demanded of one good changes in response to a change in the price of another good.
 - d. strongly normal or inferior a good is.
9. Suppose the demand function for good X is given by: $Q_{dx} = 15 - 0.5P_x - 0.8P_y$ where Q_{dx} is the quantity demanded of good X, P_x is the price of good X, and P_y is the price of good Y, which is related to good X. Using the midpoint method, if the price of good X is constant at \$10 and the price of good Y decreases from \$10 to \$8, the cross-price elasticity of demand is about
 - a. 0.57, and X and Y are substitutes.
 - b. -0.22, and X and Y are complements.
 - c. -0.80, and X and Y are complements.
 - d. -2.57, and X and Y are complements.
10. If the government removes a binding price floor from a market, then the price paid by buyers will
 - a. increase, and the quantity sold in the market will increase.
 - b. increase, and the quantity sold in the market will decrease.
 - c. decrease, and the quantity sold in the market will increase.
 - d. decrease, and the quantity sold in the market will decrease.
11. When an oligopoly market reaches a Nash equilibrium,
 - a. the market price will be different for each firm.
 - b. the firms will not have behaved as profit maximizers.
 - c. a firm will have chosen its best strategy, given the strategies chosen by other firms in the market.
 - d. a firm will not take into account the strategies of competing firms.

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12. An increase in the expected price level shifts
- both the short-run and long-run aggregate supply curves to the left.
 - neither the long-run aggregate supply curve nor the short-run aggregate supply curve to the left.
 - the long-run aggregate supply curve to the left but does not affect the short-run aggregate supply curve.
 - the short-run aggregate supply curve to the left but does not affect the long-run aggregate supply curve.
13. Price discrimination adds to social welfare in the form of
- increased total surplus.
 - decreased total surplus
 - reduced costs of production.
 - increased consumer surplus and decreased producer surplus.
14. The equilibrium quantity in markets characterized by oligopoly is
- higher than in monopoly markets and higher than in perfectly competitive markets.
 - higher than in monopoly markets and lower than in perfectly competitive markets.
 - lower than in monopoly markets and higher than in perfectly competitive markets.
 - lower than in monopoly markets and lower than in perfectly competitive markets.
15. In the long run, a monopolistically competitive firm produces a quantity that is
- equal to the efficient scale.
 - less than the efficient scale.
 - greater than the efficient scale.
 - consistent with diseconomies of scale.
16. Suppose that the money supply increases. In the short run, this increases prices according to
- both the short-run Phillips curve and the aggregate demand and aggregate supply model.
 - neither the short-run Phillips curve nor the aggregate demand and aggregate supply model.
 - the short-run Phillips curve, but not according to the aggregate demand and aggregate supply model.
 - the aggregate demand and aggregate supply model but not according to the short-run Phillips curve.
17. When the Fed decreases the discount rate, banks will
- borrow more from the Fed and lend more to the public. The money supply increases.
 - borrow more from the Fed and lend less to the public. The money supply decreases.
 - borrow less from the Fed and lend more to the public. The money supply increases.
 - borrow less from the Fed and lend less to the public. The money supply decreases.
18. If a firm in a monopolistically competitive market successfully uses advertising to decrease the elasticity of demand for its product, the firm will
- reduce its average total cost.
 - eventually have to reduce price to remain competitive.
 - increase the welfare of society.
 - be able to increase its markup over marginal cost.

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科目：經濟學

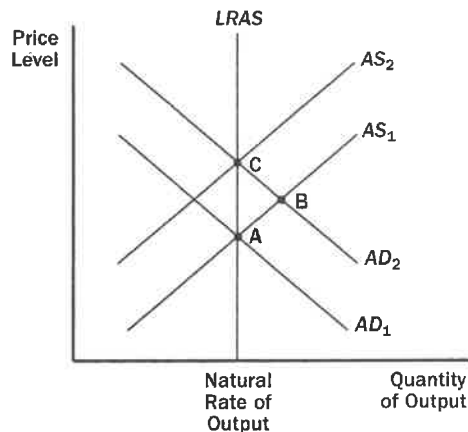
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19. According to the long-run Phillips curve, in the long run monetary policy influences
- both the inflation rate and the unemployment rate.
 - the inflation rate but not the unemployment rate.
 - the unemployment rate but not the inflation rate.
 - neither the unemployment rate nor the inflation rate.
20. Which of the following decreases inflation and increases unemployment in the short run?
- Either a decrease in government expenditures by itself or a decrease in the money supply growth rate by itself.
 - A decrease in government expenditures, but not a decrease in the money supply growth rate.
 - A decrease in the money supply growth rate, but not a decrease in government expenditures.
 - Neither a decrease in government expenditures nor a decrease in the money supply.

第二部分 應用問題 (40%)

1. The current state of the economy is shown as below. The aggregate-demand curve and short-run aggregate-supply curve intersect at the same point on the long-run aggregate-supply curve.



- In the short run, what central bank do will cause the economy to move from point A (initial equilibrium) to point B (new short-run equilibrium)? (5%)
 - Suppose Point C is a new long-run equilibrium. what causes the economy to move from point B to point C? (5%)
 - According to the sticky-wage theory of aggregate supply, compare the nominal wages and real wages at point A and at point B. Is higher/lower/equal? Why? (15%)
 - According to the sticky-wage theory of aggregate supply, how do real wages at point A compare with real wages at point C? (5%)
2. The economy of FJCM contains \$2,000 bills. If people hold equal amounts of currency and demand deposits and banks maintain a reserve ratio of 10 percent, what is the quantity of money? (10%)

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科目：統計學

系所組：金融與國際企業學系 年級：三

- (15%): (a) 假設某人為了知道A校大學畢業生平均起薪是否與2萬元相差甚遠，因此隨機調查了144個畢業生的起薪作為樣本，這144個畢業生的平均薪資為20500元，標準差為5000元，請以5%顯著水準來做假設檢定以檢驗是否A校大學畢業生平均起薪顯著異於2萬元。
(b) 若希望信賴區間估計的結論能與(a)小題中假設檢定得出的結論一致，則此信賴區間的信賴水準該設定為多少？請以此信賴水準建構信賴區間證明所得結論與(a)小題一致。
- (5%) 若某甲建立了一個90%信賴區間(1000,1500)，是否可以解讀為母體特徵值有90%的機率會落在(1000,1500)此區間範圍內？請先回答對或錯，若對請解釋，若錯誤請指出並提出修正。
- (5%) 假設檢定的第一型錯誤與檢定力有何關聯？
- (15%) 投擲硬幣兩次，若X表示第一次投出正面的次數，Y表示第二次投出正面的總次數，若此硬幣出現正面機率為0.8，請求出(a)X與Y的邊際分配 (b) $P(X=0|Y=1)$ (c) X與Y是否獨立
- (10%) 某餐廳目前主要食材都是向A商行購買，然而餐廳老闆懷疑商行A報價過高，若過高則考慮更換主要食材供應商。店長調查後發現同樣的食材也能從B商行購買，因此他向B商行索取所有相同商品的報價並與A商行價格做比較，如下表所示。請利用這組價格資料來幫老闆對價格做檢定並決定老闆是否需要更換主要食材供應商(顯著水準設定為5%)？請寫出您對檢定做出的適當假設。

食材代號	A商行	B商行
1	48	47
2	55	45
3	31	32
4	83	77
5	37	37
6	55	54

- (10%) 某展覽館想了解是否館內指標(牆上標記vs. 地圖)與開始看展地點(室內 vs. 室外)會影響遊客停留時間。針對館內指標與開始看展地點的不同組合，館長各隨機選取了三個遊客並記錄下他們從入館到出館的停留時間(分鐘)。請您用適合的分析方法檢驗館內指標對遊客停留時間是否有顯著影響(顯著水準5%)？並討論此影響是否取決於其開始看展地點的選擇(室內或室外)？請詳細列出您的分析過程，否則不予計分。

	開始看展地點	
	室內	室外
牆上標記	119,141,238	139,224,339
地圖	94,85,126	129,130,226

- (10%) 某乙為研究行銷費用(x)對銷售額(y)之影響，隨機抽取5家企業，收集其行銷費用與銷售額關係如下：

	1	2	3	4	5
行銷費x(萬元)	12	16	8	12	12
銷售額y(百萬)	8	12	4	6	5

- (1) 請求出其線性迴歸方程式，並詮釋係數代表意義。
- (2) 請問模型的整體配適度如何？請詮釋其代表意義。
- (15%) 某學校測驗參加學生 500 人，其分數分布呈現出平均值 75 分且標準差 15 分的均勻分配，
(a) 若隨機抽取 1 位學生，則此生成績低於 65 分機率多少？
(b) 若隨機選取 36 位學生，請問若 36 位學生的平均成績介於 70 與 85 分之間的機率為何？您的理論依據為何？
- (5%) 若顧客到達商店數目是 Poisson 分配，假設每小時顧客平均數 20 人，則店員等待顧客上門超過 4 分鐘的機率多少？
- (10%) 假設 X 與 Y 為獨立變數，且兩變數皆為二項分配，其中 $X \sim \text{Bin}(4, 0.2)$, $Y \sim \text{Bin}(2, 0.3)$ ，其中 4 與 2 為期望值，且 0.2 與 0.3 為標準差。假設 $Z=2X+Y$ ，請求出(a) $\text{Var}(Z)$ (b) $P(Z=1)$ (c) $\text{Cov}(X,Y)$ 。

相關資料： $Z_{0.01}=2.33$, $Z_{0.025}=1.96$, $Z_{0.05}=1.645$, $t_{0.025}(5)=2.571$, $t_{0.05}(5)=2.015$, $t_{0.05}(8)=1.860$, $t_{0.025}(8)=2.306$, $t_{0.05}(7)=1.895$, $t_{0.025}(7)=2.365$, $t_{0.05}(6)=1.943$, $t_{0.025}(6)=2.447$, $t_{0.05}(4)=2.132$, $t_{0.025}(4)=2.776$, $F_{0.05}(1,8)=0.004$, $F_{0.025}(1,8)=0.001$, $F_{0.95}(1,8)=5.317$, $F_{0.975}(1,8)=7.571$, $F_{0.95}(1,7)=5.591$, $F_{0.975}(1,7)=8.073$, $F_{0.05}(8,1)=0.188$, $F_{0.025}(8,1)=0.132$, $F_{0.95}(1,1)=161.44$, $F_{0.975}(1,1)=647.789$

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