國立中央大學 107 學年度碩士班考試入學試題

所別： 企業管理學系 碩士班 一般丙組(一般生)
　　　 企業管理學系 碩士班 一般丁組(一般生)

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科目： 經濟學

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＊請在答案卷 (卡) 內作答

一、簡答題(共 32 分，每題 8 分)：請針對各題<u>選出選項</u>並請<u>說明理由</u>。每題至少有一個選項為正確答案，答案全對始予計分，答錯不倒扣。<u>若無計算式或說明理由，該題將不予計分。</u>

1. If Linda spent all of the money in her purse, she could buy 2 cups of coffee and 3 chocolate cakes. Linda had 22 units of currency in her purse and coffee cost 2 units of currency per cup. If x denotes the number of cups of coffee and y denotes the number of chocolate cakes purchased, the set of commodity bundles that she could just afford with the money in her purse is described by the equation

(1) $2x + 6y = 22$.

(2) $2x + 3y = 22$.

Linda's utility function is $U(x, y) = x + 4y - y^2$. Given above budget equation, how many cups of coffee (x) will she demand to maximize her utility?

(3) 9.125

(4) 9.5

(5) There is not enough information to determine the answer.

2. What the following statements regarding a competitive market are **not** correct?

(1) Suppose a firm reduces its output by 10 percent. As a result, the price of its output is likely to decrease by less than 10 percent.

(2) Price and marginal revenue are equal.

(3) A firm's total revenue must be proportional to its quantity of output.

(4) If a firm is currently producing a level of output at which marginal cost exceeds marginal revenue, then a one-unit decrease in output will decrease the firm's profit.

(5) The firm's short-run supply curve is that portion of the marginal cost curve that lies above average total cost.

3. What the following statements are **not** correct?

(1) Inflation tax means that as the price level rises, the real value of money held by the public increases.

(2) The real interest rate is equal to the nominal interest rate minus the expected inflation rate.

注意：背面有試題

參考用

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(3) As the short-run Phillips curve shifts downward, there is a lower-expected rate of inflation at the level of unemployment.

(4) Assume that an economy has the Phillips curve $\pi = \pi^e - 0.2(u - 0.03)$. Then the natural rate of unemployment is 6%.

(5) U.S. production function is $Y = 540L^{1/2}$. If the labor supply curve is $L = 2700(W/P)$, the real wage (W/P) will be 2.

4. What the following statements are **not** correct?

(1) The production function is $Y= AK^{0.8}L^{0.2}$, where A is a measure of the level of technology. We know that capital grows at 2 percent per year and labor grows at 3 percent per year. If the growth rate of output is 2.8 percent per year, the growth in total factor productivity will be 0.7 percent per year.

(2) In the Solow growth model, if the production function is given by $Y=F(K,L)= K^{0.5}L^{0.5}$, the saving ratio (s) is 0.7, and the depreciation rate (δ) is 0.2 (but no technological growth and no population growth), then the change in capital stock per worker is given by the equation $\Delta k = sf(k) - \delta k$, and the steady-state ratio of output per worker (y) is 4.

(3) If there is an expected deflation in the IS-LM model, the real interest rate will increase to shift the IS curve downward. The level of output falls.

(4) For any given price level, an increase in the money supply shifts the LM curve downward, and raises output. An increase in the money supply shifts the aggregate demand curve to the right.

(5) Given the following information about the closed economy:

　　　C=300+0.7DI, where DI is the disposable income,

　　　I=200+0.2Y, G=600, T=100.

The private savings is $2860 in this economy.

二、是非題(共 10 分，每題 5 分)：請針對以下各題回答「對」或「錯」，並說明理由，若無解釋該題將不予計分。

1. 在一個兩人經濟中，經濟個體 A 的效用函數為 $U(x, y) = min\{x, 2y\}$，B 的效用函數為 $U(x, y) = x + y$，若兩人的初始原賦均為 2 單位的 x 和 2 單位的 y，則該體

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系 x 和 y 的競爭均衡價格皆為$1，而個體 A 將消費 8/3 單位的 x 和 4/3 單位的 y，個體 B 則消費 4/3 單位的 x 和 8/3 單位的 y。

2. 市場上只有兩位消費者，消費者 A 對財貨 x 的需求函數為 $q=a-b*P$，消費者 B 對財貨 x 的需求函數為 $q=c-d*P$，若財貨 x 為公共財，則市場需求函數為 $Q=(a+c)-(b+d)*P$。

三、計算與問答題(共 58 分)

1. OPEC's deal to cut oil production could end earlier than expected　(Jan. 9, 2018)
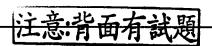
　　OPEC and its Russia-led non-OPEC allies in the deal managed to stay together for a full year of high compliance with the oil production cuts and have agreed to extend the pact for a second year to the end of 2018.

　　This year, however, the cartel and friends face even more challenges in sticking together until the end of the December, with both supply and demand uncertainties adding to the unknowns.

　　On the one hand, within the cartel, possible production slumps from two OPEC members could trigger an early exit. Another internal OPEC factor could be the ever-present possibility that some members may cheat on the production cut deal outright now that oil prices are higher.

　　On the other hand, factors outside OPEC's control, such as U.S. shale production expansion and potentially strong global oil demand growth, could also spell the end of the production pact. OPEC could see U.S. shale as rising too much and threatening to eat away at an even bigger portion of the cartel's market share. Or some phenomenal oil demand growth, stemming from solid economic growth, could help OPEC to accomplish its mission to draw the global oil inventories down to their five-year average somewhere around the time the cartel meets to review the deal in June 2018. Please use the Cournot equilibrium to explain that a collusive agreement among oligopolists may not be stable. (5 分)

2. Consider a market with n firms. The cost function of each firm is $C=1+2q+q^2$, and the market demand curve is $Q=8-P$.

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(1) In a competitive equilibrium, what is the number of firms in the long-run (n)? What is the equilibrium price (P)? How much output will each firm produce (q)? What is the profit of each firm? (8 分)

(2) If all firms agree to collude and maximize their joint profits, how much output will each firm produce? What is the equilibrium price? What is the profit of each firm? (6 分)

3. In the Mundell-Fleming model, a small open economy with perfect capital mobility ($r = r^*$) can be described by following two equations:

IS:　　$Y = C(Y-T) + I(r^*) + G + NX(e)$,

LM:　　$M/P = L(r^*, Y)$.

Suppose that the government imposes an import quota to reduce the demand for imported goods. What happen to aggregate output (Y) and the exchange rate (e) under floating and fixed exchange rates? (12 分)

Please illustrate the two equations on a graph in which output is on the horizontal axis and the exchange rate is on the vertical axis.

4. 中央公司聘請您為即將上市的兩項新產品擬定售價，經過市場調查後得到所有消費者對此兩項新產品的保留價格如下：

保留價格	消費者 A	消費者 B	消費者 C
產品 X	$10	$40	$70
產品 Y	$70	$40	$10

若您可採用的銷售方式有三種，兩產品分開銷售(兩個產品價格)、兩產品必須一起購買(Bundling,一個合購價格)或 消費者可以分開購買也可以一起購買的混合方式(兩個產品價格及一個合購價格)。

(1) 若兩項產品的單位生產成本皆為零，您會如何訂價使公司的利潤極大(銷售方式&價格)? 利潤? (3 分)

(2) 若兩項產品的單位生產成本生產皆為$20，您又會如何訂價使公司的利潤極大(銷售方式&價格)? 利潤? (4 分)

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5.(1) 中央銀行為達到其政策目標，常採用的政策工具中有調整法定準備率、調整重貼現率、公開市場操作等，請說明以上三者如何影響貨幣供給。(6 分)

(2) 貨幣供給為流通中的通貨與存款(含活期存款及定期存款)，若一國的活期存款及定期存款之法定存款準備率分別為 6% 及 8%，活期存款餘額 800 億元，定期存款餘額 300 億元，通貨淨額為 500 億元，假設銀行不保有超額準備，請問該國的貨幣乘數為何？若央行提高定期存款之法定存款準備率至 10%，此時之貨幣乘數為何？(6 分)

6.(1) 請問何謂利率期限結構(Term Structure of Interest Rate)? (2 分)

(2) 殖利率曲線(Yield Curve)存在不同形態(水平、正斜率、負斜率…)，請分別根據預期理論(Expectations Theory)、風險補貼理論(Risk Premium Theory)、市場區隔理論(Market Segmentation Theory)說明長短期利率之關係及殖利率曲線之形態。(6 分)