第一部分、回答下列 10 題單選題，每題 5 分。作答於答案卡上。

1. When a nation's current account deficit exceeds its financial account surplus, the overall _____ in the "balance of payments outcome" means that the nation's central bank is _____ foreign central banks.

a. surplus, lending to

b. surplus, borrowing from

c. deficit, lending to

d. deficit, borrowing from

2. Which of the following is NOT consistent with the events leading up to the 2007-2009 financial crisis.

a. Increasing Leverage

b. Increasing House Price

c. Decreasing Equity

d. Increasing Debt

3. Which of the following event increases natural rate of unemployment?

a. Decrease in Government Spending

b. Increase in Real Money Supply

c. Formation of a Business Cartel

d. Weakening of Labor Union

4. Countries A and B are identical in all aspect, except that A is an open economy while B is a closed economy. The government in both countries decide to increase spending. Assume that prices are fixed. How does the resulting change in GDP differs.

a. GDP increases in B but decreases in A

b. GDP increases in both countries, but more so in A

c. GDP increases in both countries, but more so in B

d. GDP increases in both countries, by the same amount

5. Which of the following would result in a real appreciation of the United States Dollar with respect to the New Taiwan Dollar?

a. Increase in US Dollar per New Taiwan Dollar nominal exchange rate

b. Increase in Price Index of Taiwan

c. Increase in Price Index of United States

d. None of the Above

6. If the central bank pursues to maintain income constant, an expansionary fiscal policy must be accompanied by _____ monetary policy, and the central bank must allow interest rate to _____ significantly.

a. an expansionary, rise

b. an expansionary, fall

c. a contractionary, rise

d. a contractionary, fall

7. Country A is a small open economy. An external shock led to the immediate appreciation of its currency with respect to the United States Dollar. Investor's expectations are not affected. What happens to interest rate in Country A.

a. Increase

b. Decrease

c. Unchanged

d. Uncertain

見背面

題號： 371
國立臺灣大學 110 學年度碩士班招生考試試題
題號：371
科目： 經濟學原理
節次： 6
共 3 頁之第 2 頁

8. Which of the following would contribute towards an increase in debt/output ratio, all other things equal. Assume that nominal interest rate is fixed and there is no Seigniorage.

a. Slower Inflation

b. Faster Real Output Growth

c. Decreased Government Spending

d. None of the Above

[9.10.] Consider a competitive firm with a production function $f: \mathbb{R}_+^n \to \mathbb{R}^2$ with n inputs, each of which costs w_j per unit, that produces two outputs that are priced at p_i, with quantity q_i, $i = 1,2$. A regulator is concerned with the firm producing too little and hence imposes a penalty for producing quantity less than Q_i; specifically, the penalty for underproduction of output i is $\lambda_i(Q_i - q_i)$ (i.e., the firm pays this amount if it produces less than Q_i). Let w be the vector of cost $\{w_1, w_2\}$ and λ be the vector of $\{\lambda_1, \lambda_2\}$

9. Which of the following statements are true?

    a. The firm's profit is concave in the vector w

    b. The firm's profit is convex in the vector w

    c. The firm's profit is both concave and convex in the vector w

    d. The firm's profit is neither concave nor convex in the vector w

10. Which of the following statements are true?

    a. The firm's profit is concave in the vector λ

    b. The firm's profit is convex in the vector λ

    c. The firm's profit is both concave and convex in the vector λ

    d. The firm's profit is neither concave nor convex in the vector λ

第二部分、回答下列 5 題。務必列出重要計算步驟，否則不給分。 ※ 注意：請於試卷內之「非選擇題作答區」依序作答，並應註明作答之部份及題號。

1. (8 分) 某寡佔市場中有廠商一、二、三共三家廠商；廠商決策變數為自己的產量，且三家廠商之產量分別為 q_1、q_2、q_3。三家廠商均無固定成本，且邊際成本皆為 2。該市場之需求函數為：$P = 740 - (q_1 + q_2 + q_3)$。決策順序為：廠商一與二同時各自決定自己的產量；觀察到 q_1 與 q_2 後，廠商三決定 q_3。求出均衡時每一家廠商的產量，以及產品均衡價格。

2. (10 分) 某位父親要將財產分給子女，其有一位女兒和一位兒子。該父親有 8 單位的財貨 X 與 38 單位的財貨 Y。財貨 X 與 Y 均不在市場上交易，故並無市價。女兒的效用函數為：$U_D(x_d, y_d) = 3x_d + y_d$，其中 x_d 與 y_d 為其分到的財貨 X 與 Y 的數量。兒子的效用函數為：$U_S(x_s, y_s) = x_s + 3y_s$，其中 x_s 與 y_s 分別為其分到的財貨 X 與 Y 的數量。女兒與兒子所分到之財貨 X 與 Y 的數量均需為非負的值。父親的效用函數為：$ln(U_D(x_d, y_d)) + ln(U_S(x_s, y_s))$，其中 ln 為自然對數函數。求出對父親最適的財產分配，即女兒與兒子各得到幾單位的財貨 X 與財貨 Y。

3. (10 分) 某廠商銷售某產品，其生產時無固定成本，邊際成本則為 3。該廠商面對兩類消費者。每位 H 類消費者對該產品的需求為：$P = 21 - q_H$，其中 P 為產品價格，q_H 為該消費者消費數量。每位 L 類消費者對該產品的需求為：$P = 9 - q_L$，其中 q_L 為該消費者消費數量。H 類消費者的人數為 1 萬人，L 類消費者的人數為 m 萬人。該廠商無法分辨消費者為 H 類或 L 類，但可採取 Two-part tariff 訂價。令其對每位消費者收取的固定費用為 F，每單位產品收取的價格為 P_T。

(a) 令 $m = 11$，求對廠商最適的 F 與 P_T，以及廠商的利潤。

(a) 令 $m = 5$，求對廠商最適的 F 與 P_T，以及廠商的利潤。

4. (10 分) 考慮產品 Z 的市場。該市場為完全競爭市場，市場中有許多家生產廠商。每家廠商的生產函數為：$q = \frac{2}{7}L^{0.5}K^{0.5}$，其中 q 為產量，L 與 K 分別為其勞動與資本的使用數量；勞動的單位價格為 0.5，資本的單位價格為 2。該市場中有 1 萬位

接 次 頁

消費者，每位消費者的效用函數為：$U(x, y) = 91 \ln(x) + y$，其中 x 為其消費產品 Z 的數量，y 為其消費其他財貨所花費的支出，$\ln$ 為自然對數函數。每位消費者的所得為 1,000。求出均衡時產品 Z 的價格與銷售數量。

5. (12 分) 某公司預計雇用一勞工為其工作。令 V 為勞工為公司帶來的獲利。$V = Y + \varepsilon$，其中 Y 為勞工努力程度，由勞工決定，ε 為一期望值為 0，變異數為 $\frac{1}{8}$ 的隨機變數。勞工努力所花費之心力成本的金錢價值為 $\frac{1}{2} Y^2$。公司給勞工的薪酬 C 可表示為：$C = W + \alpha V$，其中 W 為固定薪資，α 則為其分享獲利的比率，W 與 α 均由公司決定。令對於任一隨機變數 x，$E(x)$ 與 $Var(x)$ 分別為其期望值與變異數。勞工為風險趨避，其效用為：$E(C) - 2\,Var(C) - \frac{1}{2} Y^2$，也就是：薪酬期望值 ($E(C)$) 扣除薪酬風險的負效用 ($2\,Var(C)$) 與努力的心力成本 ($\frac{1}{2} Y^2$)。勞工保留效用為 $\frac{2}{9}$，其僅在被公司雇用所獲得之效用等於或大於保留效用時才會接受雇用。公司為風險中立，其極大化 $E(V - C)$。進行順序為：公司決定 W 與 α；觀察到 W 與 α 後，勞工決定是否接受雇用；若接受雇用，則勞工決定 Y；勞工決定 Y 之後 ε 的值實現。求出對公司最適的 W 與 α，以及在此 W 與 α 下的 Y。

試題隨卷繳回