一、简答题 (共 32 分，每题 8 分)：请针对各题选出选并请说明理由。每题至少有一个选项为正确答案，答对得分数，答错不扣分。若无计算式或说明理由，该题将不予计分。

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 the cost of coffee was 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
(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 \( \pi = \pi' - 0.2(u - 0.03) \). 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 \( (\delta) \) 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:

\[
C = 300 + 0.7DI, \text{where DI is the disposable income,}
I = 200 + 0.2Y, G = 600, T = 100.
\]

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 \( U(x, y) = x + y \)，若兩人的初始財賦均為2單位的x和2單位的y，則該體
2. Consider a market with n firms. The cost function of each firm is \( C = b + n \), and

\[ d^r = e - \theta \]

Oligopolists may not be stable. (5)

Please use the Cournot equilibrium to explain what a collusive agreement among

accords to do in the global oil market to impact the price. The net result of the global oil
demand growth, stemming from solid economic growth, could help OPEC to

increase production and potentially show global oil demand growth, could also help to

On our hands faces outside OPEC, it’s control, such as U.S.’s share production.

On the other hand, the fact outside OPEC’s control, such as U.S.’s share production

On the other hand, the thing about OPEC’s control, such as U.S.’s share production

adding to the unknowns.

This year, however, the cartel and it seems that even more challenges in sticking

the pact for a second year to the end of 2018.

The pact was an important step in the OPEC and non-OPEC allies in the deal, which is expected for

OPEC and non-Russia-related non-OPEC allies in the deal, which is expected for

Jan. 9, 2018.

1. OPEC’s deal to cut oil production could end earlier than expected.

三. 利用穿透器 (共 88 分)

\[ d_s(p-q)-(p+q)=e \]

借题发挥（共 43 分）

1. 凭借题目的命题及其命题成立的 x 与 y 的关系式

2. 凭借题目的命题及其命题成立的 x 与 y 的关系式

水性含水蒸气（干）（水）
(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:

\[
\begin{align*}
    IS: & \quad Y = C(Y-T) + I(r^*) + G + NX(e), \\
    LM: & \quad M/P = L(r^*, Y).
\end{align*}
\]

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：

<table>
<thead>
<tr>
<th>保留價格</th>
<th>消費者 A</th>
<th>消費者 B</th>
<th>消費者 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>產品 X</td>
<td>$10</td>
<td>$40</td>
<td>$70</td>
</tr>
<tr>
<td>產品 Y</td>
<td>$70</td>
<td>$40</td>
<td>$10</td>
</tr>
</tbody>
</table>

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)
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) 熱通利差曲線 (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) 說明長期短期利率之關係及通利差曲線之形態。 (6 分)