國立中山大學 114 學年度
碩士班考試入學招生考試試題

科目名稱：總體經濟學【經濟所碩士班】

I. 選擇題 (所有題目皆為單選題，每題 4 分；共 60 分)

1. Over time continued budget deficits lead to
   (A) a higher capital stock and higher real wages.
   (B) a higher capital stock and lower real wages.
   (C) a lower capital stock and higher real wages.
   (D) a lower capital stock and lower real wages.

2. If income were equally distributed among households,
   (A) each household's relative share of income would increase.
   (B) each household's relative share of income would decrease.
   (C) the top fifth of households would have 50 percent of the income.
   (D) 50 percent of the households would receive exactly 50 percent of the income.

3. Net exports equal
   (A) exports plus imports.
   (B) exports minus imports.
   (C) imports minus exports.
   (D) GDP minus imports.

4. If 2004 is the base year, then the inflation rate for 2005 equals
   (A) $[(CPI_{2005} - CPI_{2004}) / CPI_{2004}] \times 100$
   (B) $[(CPI_{2005} - CPI_{2004}) / CPI_{2005}] \times 100$
   (C) $[(CPI_{2004} - CPI_{2005}) / CPI_{2004}] \times 100$
   (D) $[(CPI_{2004} - CPI_{2005}) / CPI_{2005}] \times 100$

5. Which of the following would, by itself, reveal the most about a country's standard of living?
   (A) its level of capital
   (B) the number of hours worked
   (C) its availability of natural resources
   (D) its productivity

6. Friedman and Phelps argued that
   (A) if peoples' inflation expectations were fixed, then an increase in the money supply growth rate could not change output in the short or long run.
   (B) if peoples' inflation expectations were fixed, then a decrease in the money supply growth rate could raise output and unemployment in the short run.
   (C) any change in unemployment created by making aggregate demand increase more rapidly is temporary because people eventually revise their inflation expectations.
   (D) None of the above is correct.

7. The identity that shows that total income and total expenditure are equal is

   (A) $GDP = Y$

   (B) $Y = DI + T + NX$

   (C) $GDP = GNP - NX$

   (D) $Y = C + I + G + NX$

8. Maxine, the owner of a furniture company, decides to raise the wages of her workers even though she faces an excess supply of labor. Her decision

   (A) might increase profits if it attracts a better pool of workers to apply for her firm's jobs.

   (B) will increase the excess supply of labor.

   (C) may increase the quality of her work force.

   (D) All of the above are correct.

9. If the Fed sells government bonds to the public, then reserves

   (A) increase and the money supply increases.

   (B) increase and the money supply decreases.

   (C) decrease and the money supply increases.

   (D) decrease and the money supply decreases.

10. If velocity = 5, the price level = 1.5, and the real value of output is 2,500, then the quantity of money is

    (A) 333.33.

    (B) 750.00.

    (C) 1,050.00.

    (D) 8,333.33.

11. When inflation rises, firms make

    (A) more frequent price changes. This raises their menu costs.

    (B) more frequent price changes. This reduces their menu costs.

    (C) less frequent price changes. This raises their menu costs.

    (D) less frequent price changes. This reduces their menu costs.

12. During recessions which type of spending falls?

    (A) consumption and investment

    (B) investment but not consumption

    (C) consumption but not investment

    (D) neither consumption nor investment

13. If expected inflation is constant, then when the nominal interest rate increases, the real interest rate

    (A) increases by more than the change in the nominal interest rate.

    (B) increases by the change in the nominal interest rate.

    (C) decreases by the change in the nominal interest rate.

    (D) decreases by more than the change in the nominal interest rate.

14. An adverse supply shock causes output to

   (A) rise. To counter this a central bank would increase the money supply.

   (B) rise. To counter this a central bank would decrease the money supply.

   (C) fall. To counter this a central bank would increase the money supply.

   (D) fall. To counter this a central bank would decrease the money supply.

15. If interest rates rose more in the U.S. than in Canada, then other things the same

   (A) U.S. citizens would buy more Canadian bonds and Canadian citizens would buy more U.S. bonds.

   (B) U.S. citizens would buy more Canadian bonds and Canadian citizens would buy fewer U.S. bonds.

   (C) U.S. citizens would buy fewer Canadian bonds and Canadian citizens would buy more U.S. bonds.

   (D) U.S. citizens would buy fewer Canadian bonds and Canadian citizens would buy fewer U.S. bonds.

II. 計算與問答題(共 40 分) Note: Answer all the questions on separate sheets. Please label question numbers clearly. In Question 1, each answer is worth 5 points, and credit is only granted based on the correct final solution.

1. Consider a neoclassical growth model includes human capital:

$$Y(t) = K(t)^{\alpha_K} H(t)^{\alpha_H} [A(t)L(t)]^{1-\alpha_K-\alpha_H} ; \ 0 < \alpha_K + \alpha_H < 1,$$

$$\dot{K}(t) = s_K Y(t) - \delta K(t) ; \ 0 < s_K < 1 \text{ and } 0 < \delta < 1,$$

$$\dot{H}(t) = s_H Y(t) - \delta H(t) ; \ 0 < s_H < 1,$$

where $Y(t)$ denotes output, $L(t)$ expresses labor, $A(t)$ represents the productivity of labor, and $K(t)$ and $H(t)$ stand for the stocks of physical and human capital, respectively. Furthermore, $0 < \alpha_K < 1$ and $0 < \alpha_H < 1$ denote the shares of the two types of capital, s_K and s_H express the propensities to accumulate these types of capital, and δ represents the depreciation rate for both types of capital. Assume that labor productivity and population grow at constant rates, i.e., $\dot{A}/A = n_A$ and $\dot{L}/L = n_L$. Let $y = Y/(AL)$, $k = K/(AL)$ and $h = H/(AL)$, and the accumulation equations for the two types of capital can be written in effective labor units as: $dk/dt = \dot{k} = $ __(1)__ and $dh/dt = \dot{h} = $ __(2)__ (as an explicit mathematical function of k and h). Next, solve for the steady-state capital per effective labor unit $k(t) = k^* = $ __(3)__ (as a function of exogenous parameters). Finally, solve for the growth rate of per capita output in the steady-state equilibrium: __(4)__ .

2. Consider a Mundell's (1963) model, which is given by

$$Y = C(Y) + I(R) + G + B(E, Y, Y^*);\ 0 < C_Y < 1,\ I_R < 0,\ B_E > 0,$$
$$B_Y < 0,\ \text{and}\ B_{Y^*} > 0,$$

$$L(Y, R) = D + FR;\ L_Y > 0,\ L_R < 0,$$

$$R = R^*,$$

where the domestic variables Y, C, I, G, B, R, E, L, D, and FR are output, consumption, investment, government spending, balance of trade, interest rate, foreign exchange rate, real money balances, domestic credit, and foreign exchange reserves, respectively. The foreign variables Y^* and R^* denote foreign output and foreign interest rate, respectively. Use this model to analyze the impact of increased government spending on output under a flexible exchange rate regime. (10pt.)

3. Consider the household's two-period utility function:

$$U = \ln C_0 + \beta \ln C_1,$$

where C_0 and C_1 represent current and future consumption, respectively, and $0 < \beta < 1$ represents the discount factor. The household receives a fixed income Y_0 in period 0 and Y_1 in period 1, and pays lump-sum taxes T_0 and T_1 to the government in the two periods. The household's budget constraint is expressed as

$$C_0 + \frac{C_1}{1+r} = Y_0 - T_0 + \frac{Y_1 - T_1}{1+r},$$

where $0 < r < 1$ is the interest rate. Additionally, the government's balanced budget constraint is given by:

$$T_0 + \frac{T_1}{1+r} = G_0 + \frac{G_1}{1+r}.$$

where G_0 and G_1 denote government expenditures in the two periods. Use this model to demonstrate the Ricardian equivalence. (10pt.)