1.Consider the following expectations-augmented Phillips Curve

$$u = u^* - \alpha(\pi - \pi^e)$$

where u denotes unemployment rate; u^* denotes nature rate of unemployment; π denotes inflation rate, π^e is the expected inflation rate, $\alpha > 0$.

(a) Please define what "the nature rate of unemployment" is. (3%)

(b) What is the time path of unemployment rate (please make the graph to describe the unemployment rate with respect to the time), if

(b1). inflation is always 0. (2%)
(b2). inflation is always a constant 5 percent. (2%)

(c) Suppose inflation is random and in uniformly distributed between 0 and 8 percent.

(c1). How much is the expected inflation? (5%)
(c2). What does the observed Phillips Curve look like? (5%)

(d)Please comment the following statement.
" Because of the observed inflation-unemployed tradeoff, policy-makers could reduce inflation in order to raise employment."(3%)

2.Consider the following IS-LM model with full-employment classical AS curve

$$Y = C(Y - \bar{T}, \frac{M}{P}) + I(r) + \bar{G} \text{.....} IS$$

$$\frac{\bar{M}}{P} = L(r + \pi^e, Y) \text{.....} LM$$

$$Y = \bar{Y} \text{.....} AS$$

$$\pi^e = \bar{\mu}$$

(a) r denotes the real interest rate, π^e is the expected inflation rate. Explain why

(背面仍有題目,請繼續作答)

the assumption that real balance demand which depends on $r+\pi^e$ is reasonable. Explain why the assumption that consumption depends on $\frac{M}{P}$ is reasonable. (5%)

(b) Linearize the above equations by taking differentials. Using the carmer's rule, found out $\frac{dr}{d\bar{\mu}}$ in this model. What is the sign? Please also explain the economic intuition for this sign. (10%)

(c) How does a change in the rate of growth of money alter real output and real interest rate in this model? (5%)

3. Please use the Solow model with labor population growth and technological progress to answer the following questions.

Because of a political event, each year after that political event, there is an inflow of immigrants from Country A to Country B, so that the labor population growth (n) in Country B due to this inflow of immigrants is 2% each year. Country B has a production function $Y=K^{0.3}(AL)^{0.7}$ [output Y, capital K, labor L, knowledge A]. The natural labor population growth (that is, excluding the growth due to inflow of immigrants) is 3% a year. Labor efficiency grows at 3% a year. Before the political event, Country B is in its steady state.

(a) Please make the graph to explain how the steady state level of capital and output per efficiency unit of labor ($\tilde{k}\equiv\frac{K}{AL}$ and $\tilde{y}\equiv\frac{Y}{AL}$) will change in Country B.(7%)

(b) Explain how the growth rate of total output (Y) will change in Country B? (10%)

(c) Explain how the growth rate of real output per capita ($y=\frac{Y}{L}$) will change in Country B. (10%)

4. Economists have been explored monetary policies that respond to both the price level and real GDP. Please describe these following policy rules

a. McCallum Rule (suggested by Bennett T. McCallum) (6%)
b. Taylor Rule (suggested by John Taylor) (6%)

5. According to real business cycle theory, what causes the business cycle?(6%)

6. Use an open-economy IS-LM model to examine the consequences of a rapid decline in domestic business confidence and investment under

a. a fixed exchange rate
b. a floating exchange rate

When discussing a floating exchange rate, make clear the assumptions you are making about exchange rate determination, Under the circumstances outlined, which exchange rate regime produces the more desirable outcomes and why? (15%)