

一、選擇題/Choice questions: (18%)

1. Following statements are about the neoclassical theory of distribution, which one is correct?
(A) is a theory of how national income is divided among the factors of production
(B) is rejected by most economists today
(C) demand for the factors of production is not affected by its marginal production
(D) shows that the national income of an economy is not equal to total output
2. If output is described by a Cobb-Douglas production function, then the production function has:
(A) a degree of returns to scale that cannot be determined from the information given
(B) increasing returns to scale
(C) diminishing returns to scale
(D) constant returns to scale
3. What does the marginal product of labor mean?
(A) value of additional output when one dollar's worth of additional labor is added
(B) additional output produced when one additional unit of labor and one additional unit of capital are added
(C) output divided by labor input
(D) additional output produced when one additional unit of labor is added
4. If the money supply is held constant, then an increase in the nominal interest rate will _____ the demand for money and _____ the price level.
(A) decrease; decrease
(B) decrease; increase
(C) increase; decrease
(D) increase; increase
5. If the average price of goods and services in the economy equals \$10 and the quantity of money in the economy equals \$200,000, then real money balances in the economy equals:
(A) 2,000,000
(B) 200,000
(C) 20,000
(D) 10
6. *All* of the following are reasons for frictional unemployment *except*:
(A) the flow of information is imperfect
(B) workers have different preferences and abilities
(C) geographic mobility takes time
(D) unemployed workers accept the first job offer that they receive
7. *All* of the following are causes of structural unemployment *except*:
(A) efficiency wages
(B) unemployment insurance
(C) minimum-wage laws
(D) the monopoly power of unions

8. In the Solow growth model, the assumption of constant returns to scale means that:
- (A) all economies have the same amount of capital per worker
 - (B) the number of workers in an economy does not affect the relationship between output per worker and capital per worker
 - (C) the steady-state level of output is constant regardless of the number of workers
 - (D) the saving rate equals the constant rate of depreciation
9. According to the Solow model, persistently rising living standards can only be explained by:
- (A) capital accumulation
 - (B) saving rates
 - (C) technological progress
 - (D) population growth

二、簡答題/Briefly answer the following questions: (32%)

1. Exhibit: Quantity Consumed and Price of Good

	Base Year	Later Year
Price of good A	100	200
Quantity of good A	100	200
Price of good B	100	100
Quantity of good B	100	100

In the exhibit, the citizens of country Farfaraway come to desire more of good A. As a result, the quantity and price of the good both rise.

- a. Compute nominal GDP in the base year and later year. (4%)
 - b. Compute real GDP in the base and later years (in base-year prices). (4%)
 - c. Compute the GDP deflator in the later year, using your answers to parts a and b.? (2%)
 - d. Compute a fixed-weight price index for the later year, using the base-year quantities as weights. (2%)
2. For this problem assume that time progresses in discrete units. Suppose that the economy is summarized by the following:
- Technology: $Y_t = 10K_t^{0.3}(A_tL_t)^{0.7}$
- Consumption Function: $C_t = 0.8Y_t$
- Depreciation rate: 10% (i.e., $\delta = 0.10$)
- Population growth: 2% (i.e. $n=0.02$)
- Technological growth: 1% (i.e. $g=0.01$)
- a. Find the per effective labor unit production function. (2%)
 - b. Find the per effective labor unit steady state investment function. (2%)
 - c. Find the steady state (long run) equilibrium values of i_t , k_t , y_t , c_t and s_t for the economy. (10%)
3. Thomas Sargent and Christopher Sims were awarded jointly for the Sveriges Riksbank Prize in Economics Sciences (also known as Nobel Prize in Economics) in 2011. Please briefly describe (in 1 or 2 sentences) their main contributions in Macroeconomics for 2011 Nobel Prize. (6%)

三、簡答與計算繪圖題

1. (答案請列出必要的計算式與計算過程，缺計算說明者不予計分)

(25%) 國民所得中，由消費、投資與政府支出所構成的總體經濟模型如下所示：

$$C = \frac{4}{5}Y_d + 17, \quad G = 50$$

$$I = \frac{1}{5}Y - 5r + 15, \quad M_d = 108 - 9r$$

$$T = \frac{1}{4}Y - 10, \quad M_s = 81, \quad P = 1$$

(C：消費 I：投資 G：政府支出 Y_d ：可支配所得 Y：國民所得 T：稅收 M_s ：貨幣供給 M_d ：貨幣需求 P：一般物價水準 r：利率)

- (1) 請根據前述函數推導 IS 曲線(3%)，並繪圖說明(3%，圖 1-1)。
 - (2) 請根據前述函數推導 LM 曲線(3%)，並繪圖說明(3%，圖 1-2)。
 - (3) 請根據前述函數計算均衡的國民所得與利率水準(4%)，並請另外繪製 IS-LM 圖標明均衡水準位置(4%，圖 1-3)。
 - (4) 如果政府考慮將國民所得再提高 100 單位時，請說明貨幣供給量必須要變動的單位。(5%)
2. (10%)一個朋友出國到島國「吉德布德察（簡稱 GBL）」去旅遊，該國的貨幣單位是「泡泡(BB)」，最有名的小吃是與我國的春捲相當類似的吉德捲餅(kid roll)。過完年後遇到他，「現在去「吉德布德察」旅行要比 10 年前貴多了。」朋友這樣補充著：「10 年前去蜜月旅行時，1 元台幣可以兌換 10 泡泡：這次去，1 元新台幣卻只能兌換 8 泡泡。」
- (1) 假設這 10 年期間，兩地通貨膨脹率為零，您同意這位朋友的說法嗎？請說明理由。(4%)
 - (2) 假設這 10 年期間內我國與吉德布德察的通貨膨脹分別是 50%與 15%，這樣到底現在我國民眾到「吉德布德察」旅行是會比十年前較貴、比較便宜還是沒有差別？請自行定價後以吉德捲餅與台灣春捲為例，向朋友解釋您「同意與否」的理由。(6%)
3. (15%)Phillips 曲線(註：圖形推導時須附上必要的文字說明，僅文字說明或繪圖一項者，均不予計分)
- (1) 請簡要定義何謂「Phillips 曲線」。(5%)
 - (2) 請分別繪圖說明「長期與短期 Phillips 曲線」(4%)，並請說明兩者差異的理由。(6%)