

國立中央大學 110 學年度碩士班考試入學試題

所別： 財務金融學系 碩士班 甲組(一般生)

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科目： 經濟分析

本科考試禁用計算器

*請在答案卷(卡)內作答

計算題及問答題

1. Suppose that a firm has the following production function $Q(K, L) = 2L\sqrt{K}$
 - (1) If the price of labor (L) is 2 and the price of capital (K) is 4, what is the optimal ratio of capital to labor? (5%)
 - (2) For an output level of $Q=1000$, how much of labor and capital will be used? (10%)

2. Suppose that a firm with the production function $Q = \min(2K, 3L)$ is currently using 6 units of capital (K) and 5 units of labor (L). What are the marginal products of K and L in this case? (10%)

3. Suppose a representative firm in a perfectly competitive, constant-cost industry has a cost function $TC=4Q^2+100Q+100$
 - (1) What is the long-run equilibrium price for this industry? (5%)
 - (2) If market demand is given by the function $Q=1000-P$, where P denotes price, how many firms will operate in this long-run equilibrium? (5%)

4. Suppose a perfectly discriminating monopolist faces market demand $P=100-10Q$ and has constant marginal cost $MC=20$ (with no fixed costs).
 - (1) How much does the monopolist sell? (5%)
 - (2) How much profit does the monopolist earn? (5%)
 - (3) What is the maximum per-period license fee the government could charge the firm and have the firm still stay in business? (5%)

5. The money supply is \$20 million, currency held by the nonbank public is \$5 million, and the reserve-deposit ratio is 0.25.
 - (a) What is the quantity of bank reserves? (5%)
 - (b) What is the money multiplier (give a number)? (5%)

注意:背面有試題

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6. Desired consumption is $C^d = 1000 + 0.8Y - 75,000r - G$, and desired investment is $I^d = 400 - 25,000r$. Real money demand is $M^d/P = Y - 50,000i$. Other variables are $\pi^e = 0.02$, $G = 600$, $\bar{Y} = 2,000$, and money supply $M^s = 3000$. r denotes the real interest rate, i denotes the nominal interest rate, G denotes the government spending, π^e is the expected inflation rate, P is the price level, and \bar{Y} is the full-employment level of output.
- (a) Find the equilibrium values of the real interest rate, consumption, investment, and the price level. (8%)
- (b) Suppose government purchases rise to 1200. What happens to the variables listed in part (a)? (4%)
7. Describe the Taylor rule. If the Federal Reserve were following the rule, what would the nominal federal funds rate be if the inflation rate over the past year were 2.5% and output were 2% below its full-employment level in the U.S.? (7%)
8. You note that over the last five years, the exchange rate of New Taiwan dollar per U.S. dollar has been from 32.9825 on January 1, 2016 to 28.48 on December 31, 2020. During 2016 – 2020, Taiwan's consumer price index rose from 100 to 102.3 and the US consumer price index rose from 100 to 108.
- (a) On the basis of these movements, would you expect the U.S. to be buying more or less Taiwan goods? Why? (5%)
- (b) Would you advise a foreign exchange speculator to buy US dollar at this point or to change U.S. dollar into New Taiwan dollars? Why or why not? (5%)
9. (a) In your opinion, what is the economic shock caused by the COVID-19 epidemic? Explain your answer. (3%)
- (b) Use the IS-LM model to illustrate the possible short-run impact of this shock on income, the interest rate, consumption, and investment. Be sure to use a graph in your answer. (8%)

注意:背面有試題