

國立清華大學 100 學年度碩士班入學考試試題

系所班組別：計量財務金融學系甲組、乙組

考試科目（代碼）：經濟學(4702、4802)

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1. In the Solow growth model, production function in per capita terms is expressed as $y = f(k)$. Assume that the population grows at a constant rate $n \equiv \Delta L/L$, depreciation rate of the capital stock is δ , saving rate is s , and that technology A is unchanged. Capital per capita will accumulate according to

- [A] $\Delta k = \delta y - nk$
- [B] $\Delta k = \delta y - (n + s)k$
- [C] $\Delta k = sy - (n + \delta)k$
- [D] $\Delta k = sy - nk$
- [E] None of the above.

2. Following the first question. Let MPK denote the marginal product of capital. The level of k^* that maximizes consumption is the one at which

- [A] $MPK = \delta$
- [B] $MPK = n$
- [C] $MPK = \delta - n$
- [D] $MPK = \delta + n$
- [E] $MPK = \delta + n + s$

3. Which of the following statements is true?

- [A] Growth accounting explains what part of growth in total export is due to growth in different factors of production.
- [B] Changes in total productivity are also called the Cobb-Douglas residual.
- [C] Robert Lucas contributed greatly to neoclassical growth theory in the 1950s and 1960s.
- [D] Growth in government consumption expenditures is a source of long-term output growth.
- [E] Empirical study of East Asian growth by Alwyn Young concludes that the remarkably high growth in these countries is mostly explained by increases in labor force participation and in capital input.

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4. Which of the following statements about business cycle is true?

- [A] Consumption is far more volatile than investment over the business cycle.
- [B] In a recession, households respond to the fall in their incomes by consuming less durable goods and more non-durable goods.
- [C] The negative relationship between the change in the unemployment rate and the percentage change in real GDP is called Phillips curve.
- [D] Leading indicators are variables that tend to fluctuate in advance of the overall economy.
- [E] In macroeconomics, the difference between the short run and the long run is the behavior of exchange rates.

5. John Taylor's rule for monetary policy is expressed as: $i_t = 2 + \pi_t + 0.5 \times (\pi_t - \pi_t^*) + 0.5 \times (\tilde{y}_t)$, where i_t is nominal interest rate, π_t is inflation rate, $\pi_t^* = 2\%$ is the target inflation rate, and \tilde{y}_t is output gap. To hit the inflation target at full-employment, the monetary authorities should set the nominal interest rate equal to

- [A] 0 percent
- [B] 1.5 percent
- [C] 2 percent
- [D] 4 percent
- [E] None of the above.

6. Assume that the long-run aggregate supply curve is vertical.

- [A] The aggregate supply relationship depends on the time horizon because prices are sticky in the long run but are flexible in the short run.
- [B] The level of output is independent of money supply.
- [C] Changes in aggregate demand affect output but not prices.
- [D] Following an expansion in money supply, the economy ends up with output that is higher than potential output.
- [E] The aggregate demand and aggregate supply curves together pin down the economy's price level, but not the economy's quantity of output.

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7. Consider an increase in government purchases in the IS-LM model.

- [A] The IS curve shifts to the left.
- [B] The increase in government purchases raises income, interest rates, and the price level.
- [C] Crowding out occurs because expansionary fiscal policy causes interest rates to rise, thereby reducing government purchases.
- [D] The increase in income in response to the fiscal expansion is larger than it is in the Keynesian cross.
- [E] Suppose the monetary authorities increase the money supply to keep the interest rate at its original level, the increase in income in response to the fiscal expansion will be the same as it is in the Keynesian cross.

8. According to the Mundell-Fleming model, a small open economy with perfect capital mobility can be described by two equations:

$$Y = C(Y - T) + I(r^*) + G + NX(e)$$
$$M/P = L(r^*, Y)$$

The exogenous variables are fiscal policy G and T , monetary policy M , the price level P , and the world interest rate r^* . The endogenous variables are income Y and the exchange rate e .

- [A] A fiscal expansion under floating exchange rates raises both the exchange rate and income.
- [B] Crowding out occurs because expansionary fiscal policy causes interest rates to rise, thereby reducing private investment.
- [C] A monetary expansion under floating exchange rates lowers the exchange rate and raises income.
- [D] A fiscal expansion under fixed exchange rates raises both exchange rate and income.
- [E] Under fixed exchange rates, monetary policy is more effective than fiscal policy.

9. Which of the following statements is false?

- [A] The real wage is pro-cyclical: the real wage tends to rise when output rises.

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- [B] In the sticky-wage model, the real wage should be pro-cyclical.
- [C] We can derive the Phillips-curve equation from the aggregate supply equation.
- [D] The assumption that people form their expectations of inflation based on recently observed inflation is called adaptive expectations.
- [E] The assumption that people optimally use all the available information to forecast the future is called rational expectations.

10. Assume that private domestic investment decreased by \$10 billion, government budget deficit increased by \$25 billion, exports decreased by \$15 billion, and imports decreased \$20 billion. By how much did private domestic saving change?

- [A] Private domestic saving increased by \$10 billion.
- [B] Private domestic saving increased by \$20 billion.
- [C] Private domestic saving increased by \$30 billion.
- [D] Private domestic saving did not change at all.
- [E] The change in private domestic saving cannot be determined from this information.

11. Which of the following statements is true?

- [A] The unemployment rate is defined as the percentage of the total population that is unemployed.
- [B] The accounting system used to measure GDP and many related statistics is called national growth accounting.
- [C] The ratio of labor income to total income in industrial countries has remained constant over a long period of time, while the ratio of capital income to total income is more volatile.
- [D] To maximize profit, a competitive firm hires up to the point at which the marginal product of labor equals to nominal wage.
- [E] Suppose that an economy's production function is Cobb-Douglas $F(K, L) = AK^\alpha L^{1-\alpha}$ with parameter $\alpha = 0.3$. The fraction of income that labor receives is 0.7.

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12. The primary way in which a modern central bank controls the supply of money is through

- [A] Open market operations
- [B] Discount window
- [C] Reserve requirements
- [D] Bailouts
- [E] Sterilization policies

13. Which of the following identities for an open economy is false?

- [A] Net exports are equal to domestic output minus domestic spending.
- [B] Net capital outflow is equal to trade balance.
- [C] Saving-investment gap is equal to trade balance.
- [D] Under fixed exchange rates, balance of payments are equal to the changes in official reserves.
- [E] Balanced trade implies net capital inflow.

14. The following table describes the production possibilities of two cities

	Pairs of Red Socks per Worker per Hour	Pairs of White Socks per Worker per Hour
City A	4	4
City B	2	1

- [A] City B has an absolute advantage in the production of red and white color socks.
- [B] City A has a comparative advantage in both color socks.
- [C] City B has a comparative advantage in the production of red color sock.
- [D] If the cities trade with each other, city B will export white color sock to city A.
- [E] None of the above is true.

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15. Suppose the price elasticity of pizza is 0.3. If the price of a pizza increases from \$2 to \$4, what happens to the quantity of pizza demanded? (Use the midpoint method in your calculations)

- [A] The quantity falls by 20 percent.
- [B] The quantity falls by 30 percent.
- [C] The quantity falls by 40 percent.
- [D] The quantity falls by 50 percent.
- [E] The quantity falls by 60 percent.

16. Suppose the demand and supply schedules for two-bedroom apartments are as follows:

Price \$ (Rent per month)	Quantity Demanded	Quantity Supplied
100	300	0
150	275	50
200	250	100
250	225	150
300	200	200
350	175	250

Now the government impose a price ceiling that is \$50 above the equilibrium price. How many two-bedroom apartments will be rented?

- [A] 150
- [B] 175
- [C] 200
- [D] 225
- [E] 250

17. Tom is hungry for a pizza. Here is the value he places on a pizza:

Value of first pizza	\$6
Value of second pizza	\$5
Value of third pizza	\$4
Value of fourth pizza	\$3
Value of fifth pizza	\$2

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If the price of a pizza is \$2.5, how much consumer surplus does Tom get from his purchase of pizza?

- [A] \$6
- [B] \$7
- [C] \$8
- [D] \$9
- [E] \$10

18. Given the following supply and demand functions:

$$Q^S = 2P$$

$$Q^D = 600 - 2P$$

Suppose that a tax of T is placed on buyers, so the new demand function is

$$Q^D = 600 - 2(P + T)$$

The tax revenue is

- [A] $300 \times T$
- [B] $300 \times T^2$
- [C] $(300 - T) \times T$
- [D] $(300 - T) \times T^2$
- [E] None of the above.

19. Which of the following examples represents a positive externality?

- [A] The exhaust from automobiles.
- [B] Shabby historic buildings.
- [C] Barking dogs.
- [D] Research into new technologies.
- [E] None of the above.

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20. There are three industrial firms in town.

Firm	Initial Pollution Level	Cost of Reducing Pollution by 1 Unit
A	40 Units	\$25
B	60 Units	\$35
C	80 Units	\$40

The government wants to reduce pollution to 120 units, so it gives each firm 40 tradable pollution permits. Firms can buy or sell permits. How much higher would the costs of pollution reduction be if the permits could not be sold.

- [A] 600
- [B] 700
- [C] 800
- [D] 900
- [E] None of the above.

21. Which of the following examples represents public goods?

- [A] A fireworks display
- [B] National defense
- [C] Basic research
- [D] Fighting poverty
- [E] All of the above.

22. Consider the following progressive income tax schedule

Income	Amount of Tax	Percent of Income
\$40,000	\$8,000	20%
\$80,000	\$20,000	25%
\$160,000	\$48,000	30%

- [A] The average tax rates for people earning \$40,000 is 25%.
- [B] The average tax rates for people earning \$80,000 is 30%.
- [C] The marginal tax rate as income rises from \$40,000 to \$80,000 is 30%.
- [D] The marginal tax rate as income rises from \$80,000 to \$160,000 is 40%.
- [E] None of the above.

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23. A cost that does not depend on the quantity produced is a

- [A] opportunity cost
- [B] total cost
- [C] fixed cost
- [D] variable cost
- [E] marginal cost

24. A monopoly faces the following demand schedule

Price	50	45	40	35	30	25	20	15	10
Quantity Demanded	0	10	20	30	40	50	60	70	80

The monopoly has fixed costs of 60. The marginal cost of production is 25. What quantity would the profit-maximizing monopoly choose?

- [A] 20
- [B] 30
- [C] 40
- [D] 50
- [E] 60

25. Which of the following statements is false?

- [A] An oligopoly is a market with only a few sellers, each offering a product similar or identical to the others.
- [B] The market for cigarettes is an example of oligopoly.
- [C] Monopolistic competition is a market in which there are many firms selling products that are similar but not identical.
- [D] Markets for novels, movies, and computer games are examples of monopolistic competition.
- [E] Nash equilibrium is the solution to a cooperative game.