

Final Exam

Apr. 22, 2024

Multiple Choice Tasks

Select the answer that most closely answers the question.

1. A professional runner plans to buy a pair of Nike shoes for her next race. Which of the following could be her opportunity cost? [4p]
 - A. The price of the Nike pair of shoes.
 - B. The medical bill in case she twists her ankle during the race.
 - C. That she could have bought a pair of Adidas shoes instead.**
 - D. The satisfaction from winning the race.

[An opportunity cost is a benefit from the alternatives that one loses after committing to one decision]
2. Which of the following is LESS likely to increase the demand for condoms? [4p]
 - A. A decrease in the cost of latex used to make condoms.** *[The cost of raw materials affects the supply, not the demand]*
 - B. An outbreak of sexually transmitted infections. *[It would incentivize people to protect themselves against STIs]*
 - C. A new law banning abortion. *[People would fear the consequences of unintended pregnancies]*
 - D. An increase in the price of contraceptive pills. *[The price of a substitute affects the demand of the good]*
3. Which of the following is the government expected to do, in order to decrease inflation? [4p]
 - A. Decrease investment (I). *[Government does not control private investment, firms do]*
 - B. Decrease government spending (G).** *[This would decrease aggregate demand, thus decreasing the price level]*
 - C. Decrease the income tax coefficient (t). *[This would have an expansionary effect on expenditure causing more inflation]*
 - D. Decrease consumption (C). *[Government does not control consumption, households do]*
4. Firms A and B produce homogeneous products, face the same market demand, have identical cost and compete with respect to quantity. Which of the following should B do if he believes that A will produce more than its Cournot quantity? [4p]
 - A. To produce more than A.
 - B. To produce its Cournot quantity.
 - C. To produce less than its Cournot quantity.**
 - D. To increase its price.

[In a Cournot reaction function, q_1 and q_2 are inversely related. Thus, if a rival decides to increase their quantity, the optimal reaction for the other rival is to decrease theirs]

5. An economy has a nominal GDP growth rate of 3% and inflation 6%. Which is more possible? [4p]
- A. Real GDP has increased. *[real GDP growth rate = nominal GDP growth rate – inflation = 3% – 6% = –3%, thus real GDP has decreased]*
 - B. The unemployment rate has decreased. *[Since real GDP has decreased, less goods have been produced, which means that less workers were employed]*
 - C. The economy has produced less products and services.**
 - D. The purchasing power of the citizens has increased. *[Prices have increased more than the real GDP, so purchasing power has fallen]*
6. A Singaporean company issued corporate bonds worth S\$10B, which were bought by Singaporean investors. How would this affect Singapore's money market? [4p]
- A. Money demand has increased.
 - B. Money demand has decreased.
 - C. Money supply has increased.
 - D. Money supply has decreased.
 - E. Money market has not been affected.**
[Money just changed hands within Singapore from the investors to the company]
7. ChatGPT has made it simple for employees to automate many routine tasks. Which of the following is most likely to be the result of the expected further development of AI? [4p]
- A. Labor productivity will increase.** *[Workers will develop new skills using the AI and will be able to produce more per work hour]*
 - B. Capital productivity will decrease. *[AI will enable capital to produce more output per machine]*
 - C. Technological progress will stall. *[AI is supposed to trigger technological development]*
 - D. Unemployment will decrease. *[AI is expected to replace some jobs and create new ones, however the total impact on employment cannot be predicted]*
8. Which of the following is most likely to increase M1? [4p]
- A. When an individual buys a smartphone using a debit card.
 - B. When an individual redeems a winning lottery ticket.
 - C. When the CB buys a government bond by the government.**
 - D. When the government raises the salary of all police officers.
 - E. All of the above.
[A, B and D refer only to money changing hands. When CB buys government bonds from the government, fresh money is injected in the economy]
9. Which of the following is more consistent with the statement: "Drunk driving leads to thousands of deadly car accidents every year"? [4p]
- A. The social benefit of drinking alcohol lies below its demand.**
 - B. The social benefit of drinking alcohol lies above its demand.
 - C. The social marginal cost of producing alcohol lies below its supply.
 - D. The social marginal cost of producing alcohol lies above its supply.
[The statement describes a negative externality of alcohol consumption, which means that the social benefit is lower than the private benefit]

10. The Central Bank announces that it will increase the interest rate at the end of the year. How would you expect speculators to react? [4p]
- A. They will buy bonds today.
 - B. They will sell bonds today.**
 - C. They will sell bonds at the end of the year.
 - D. They will not react to this information.
- [The increase in interest rate will cause bonds' price to decrease, so speculators will sell them today that their price is still high]*
11. Which of the following is most likely to create a surplus in a PC market? [4p]
- A. A price floor below the PC price. *[Such price floor will be non-binding, thus will not have any effect]*
 - B. A price ceiling below the PC price. *[Binding price ceiling would create a shortage]*
 - C. Both of the above.
 - D. None of the above.**
12. Which of the following is more likely to increase employment? [4p]
- A. Stronger labor unions. *[Labor unions usually negotiate higher wages and employment benefits, which in turn increase unemployment]*
 - B. Worse unemployment benefits.** *[Unemployment benefits may disincentivize some individuals to search for a job]*
 - C. Illegal immigration from neighboring countries. *[Immigrants take low level jobs, thus reducing the number of vacancies for the locals who are interested in such jobs]*
 - D. The increase of minimum wage. *[Firms which cannot afford the higher minimum wage will reduce their personnel]*
13. An economy is currently at its steady-state. Which of the following will happen, if the saving rate (s) increases? [4p]
- A. GDP will grow.**
 - B. GDP will shrink.
 - C. GDP will remain unchanged.
 - D. All of the above are possible.
- [Increase in s will cause $sY > dK$, which will lead to GDP growth]*

Problem A

[Scenario A] The demand for scooters in an economy is given by $p = 1,000 - 100Q$, where p is the price and Q is the total quantity of scooters. There is only one scooter manufacturer in the economy with a constant marginal cost of 200 and zero fixed cost.

14. What price will the monopolist charge in scenario A to maximize her profit? [4p]
- A. Around 0 dollars.
 - B. Around 100 dollars.
 - C. Around 200 dollars.
 - D. Around 300 dollars.
 - E. Around 400 dollars.
 - F. Around 500 dollars.
 - G. Around 600 dollars.**

[MR = MC or $1,000 - 200Q = 200$ or $200Q = 800$ or $Q = 4$. Then, from the demand function $p = 1,000 - 100 \cdot 4$ or $p = 600$]

15. How many scooters will the monopolist sell in scenario A, if a regulator forces her to price for efficiency? [4p]

- A. 0 scooters.
- B. 2 scooters.
- C. 4 scooters.
- D. 8 scooters.**
- E. 16 scooters.
- F. 100 scooters.

[Monopolist now is forced to price at $p = MC$ or $p = 200$. Then, again from the demand function we have $200 = 1,000 - 100Q$ or $100Q = 800$ or $Q = 8$]

16. Which of the following is the most likely to happen in scenario A, if the government forces the monopolist to price for efficiency? [4p]

- A. She will shut down immediately.
- B. She will continue her operation in the short-run, but she will shut down in the long-run.
- C. She will continue her operation indefinitely.**
- D. We need more information to answer.

[Constant MC and zero FC mean that $AC = MC = 200$. Profit for the seller is $\Pi = (p - AC)Q = (200 - 200)8 = 0$. With $\Pi = 0$ the monopolist has no reason to ever shut down]

Problem B

[Scenario B] Consider an economy where $X = M$, household's consumption is $C = 150 + 0.5(Y - T)$, private investment (I) is 50, and government spending (G) is 100. In this economy the law defines that the Government's budget must be balanced ($T = G$).

17. How much is the equilibrium output (Y) in the economy from scenario B? [4p]

- A. Around 0.
- B. Around 100.
- C. Around 300.
- D. Around 500.**
- E. Around 700.
- F. Around 1,000.
- G. Around 2,000.

[$Y = C + I + G$ or $Y = 150 + 0.5(Y - T) + 50 + 100$ or because $T = G$, $Y = 300 + 0.5(Y - 100)$ or $Y = 300 + 0.5Y - 50$ or $0.5Y = 250$ or $Y = 500$]

18. How much is the tax coefficient (t) in the economy from scenario B? [4p]

- A. Zero.
- B. Around 5%.
- C. Around 10%.
- D. Around 15%.
- E. Around 20%.**

[Collected taxes are $T = G = 100$. Income is $Y = 500$. Thus, taxation (t) is the 20% of income]

Short Answer Tasks

Answer the following questions in no more than 80 words.

19. The Central Bank decides to increase the real interest rate. Briefly explain HOW this will affect the economy. [7p] *[Limit 80 words]*

A higher real interest rate will render several investment projects in the economy not worthy, thus they will never materialize. As a result, employment and real GDP will decrease. [29 words]

20. The Central Bank decides to increase the real interest rate. Briefly explain WHY they may want to do this. [7p] *[Limit 80 words]*

A higher interest rate will discourage loans and the M1 money circulating in the economy will decrease. This will prevent prices from further increasing and curb inflation. [27 words]

21. Briefly explain why in macroeconomics money can be considered to actually be debt. [7p] *[Limit 80 words]*

When a transaction occurs, the seller receives money in exchange for the good or the service sold. This money can be seen as an "IOU" or an unsettled transaction because the economy has not yet paid back the seller with a real good or service of equal value. [48 words]

22. When we examined Perfect Competition and Monopolistic Competition in class, we saw that profits in the short-run can be different than in the long-run. When we discussed Monopoly, however, we did NOT distinguish at all between the short-run and the long-run behavior of the firm. Why there is no such distinction in Monopoly? [7p] *[Limit 80 words]*

Monopoly has barriers of entry. Even when the seller has high profits, entry will not occur, thus, S-R profits can be maintained in the L-R. [25 words]

END OF TASKS