厦门大学《经济学原理》课程试卷

王亚南经济研究院2021年级经济学本科国际化试点班

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试卷类型：（A卷）

Principles of Economics

Final Examination

Part I
Multiple Choices (2 points each)

1. Which of the following is an example of a positive externality

   (a) Smoking
   (b) **Research and Development**
   (c) Pollution
   (d) Emission of CO_2

2. If the production of a good yields a positive externality, then the social-cost curve lies ___ the supply curve, and the socially optimal quantity is ___ than the equilibrium quantity.

   (a) above, greater
   (b) above, less
   (c) **below, greater**
   (d) below, less

3. When the government levies a tax on a good equal to the external costs associated with the good's production, it ___ the price paid by consumers and makes the market outcome ___ efficient

   (a) decrease, more
   (b) decrease, less
   (c) **increase, more**
   (d) increase, less

4. Which of the following statements about corrective taxes is TRUE?

   (a) It will inevitably lead to deadweight losses.
   (b) **It reduces quantity transacted in a market.**
   (c) Economists prefer command-and-control regulations to corrective taxes.
   (d) It is not as efficient as tradable permits when applied to the case of pollution reduction.

5. Private solutions to externality problems do not always work because

   (a) Property rights are unclear.
   (b) Transaction costs make negotiating difficult
   (c) There are many parties of interest and they cannot reach agreements.
   (d) **All of the above are correct.**

6. Governments can improve market outcomes for

   (a) public goods but not common resources.

   (b) common resources but not public goods.

   (c) **both public goods and common resources.**

   (d) neither public goods nor common resources.

7. By driving onto a congested road for which no toll is charged, a driver

   (a) contributes to the overuse of a common resource.

   (b) contributes to a negative-externality problem.

   (c) is inflicting additional time cost on all of the other drivers.

   (d) **All of the above are correct.**

8. A view of a spectacular sunset along a private beach is an example of a

   (a) private good.

   (b) public good.

   (c) **nonrival but excludable good.**

   (d) rival but nonexcludable good.

9. Information tend to be non-excludable because it can be spread easily, and non-rival in consumption because one person's consumption of information does not directly diminish another person's consumption of information. Hence, information tends to be a

   (a) Private good

   (b) **Public good**

   (c) Club good

   (d) Common resource

10. As a result, information tends to be _____ by the free market.

    (a) over-priced

    (b) under-priced

    (c) over-consumed

    (d) **under-provided**

11. The government of Wrexington, a country which has adopted American GDP accounting conventions, reported that GDP in quarter 3 was $12 billion at an annual rate. This means that the market value of all final goods and services produced within Wrexington in quarter 3 was

(a) **$3 billion.**

(b) $4 billion.

(c) $12 billion.

(d) $12 billion.

12. Suppose there are only two firms in an economy: Cowhide, Inc. produces leather and sells it to Couches, Inc., which produces and sells leather furniture. With each $1,000 of leather that it buys from Cowhide, Inc., Couches, Inc. produces a couch and sells it for $3,000. Neither firm had any inventory at the beginning of 2006. During that year, Cowhide produced enough leather for 20 couches. Couches, Inc. bought 80% of that leather for $16,000 and promised to buy the remaining 20% for $4,000 in 2007. Couches, Inc. produced 16 couches during 2006 and sold each one during that year for $3,000. What was the economy's GDP for the 2006?

(a) $48,000

(b) **$52,000**

(c) $64,000

(d) $68,000

13. For an economy as a whole, income must equal expenditure because

(a) the number of firms is equal to the number of households in an economy.

(b) international law requires that income equal expenditure.

(c) every dollar of saving by some consumer is a dollar of spending by some other consumer.

(d) **every dollar of spending by some buyer is a dollar of income for some seller.**

14. Gross domestic product includes all

(a) legal and illegal goods, but it excludes all legal and illegal services.

(b) legal and illegal goods and all legal and illegal services.

(c) legal and illegal goods and legal services, but it excludes illegal services.

(d) **legal goods and services, but it excludes illegal goods and services.**

15. If net exports is a negative number for a particular year, then

(a) the value of firms inventories declined over the course of the year.

(b) consumption exceeded the sum of investment and government purchases during the year.

(c) the value of goods sold to foreigners exceeded the value of foreign goods purchased during the year.

(d) **the value of foreign goods purchased exceeded the value of goods sold to foreigners during the year.**

16. The CPI is a measure of the overall cost of

    (a) The inputs purchased by a typical producer.

    (b) **The goods and services purchased by a typical consumer.**

    (c) The goods and services produced in the economy.

    (d) The stocks on the New York Stock Exchange.

17. In the CPI, goods and services are weighted according to

    (a) How long a market has existed for each good or service.

    (b) The extent to which each good or service is regarded by the government as a necessity.

    (c) **How much consumers buy of each good or service.**

    (d) The number of firms that produce and sell each good or service.

18. When computing the cost of the basket of goods and services purchased by a typical consumer, which of the following changes from year to year?

    (a) The quantities of the goods and services purchased

    (b) **The prices of the goods and services**

    (c) The goods and services making up the basket

    (d) All of the above are correct.

19. An increase in the price of imported coffee shows up

    (a) In the consumer price index and in the GDP deflator.

    (b) **In the consumer price index, but not in the GDP deflator.**

    (c) In the GDP deflator, but not in the consumer price index.

    (d) In neither the consumer price index nor in the GDP deflator.

20. The consumer price index was 225 in 2006 and 234 in 2007. The nominal interest rate during this period was 6.5 percent. What was the real interest rate during this period?

    (a) **2.5 percentage.**

    (b) 4.0 percentage.

    (c) 6.76 percentage.

    (d) 10.5 percentage.

Part II
Problems

Problem 1 (15 points)

There are three industrial firms in Peace Village. Firm A initially pollute 100 units, and its cost of reducing pollution by 1 unit is \$20. Firm B initially pollute 80 units, and its cost of reducing pollution by 1 unit is \$30. Firm C initially pollute 70 units, and its costs of reducing pollution by 1 unit is \$10.
The government wants to reduce the total pollution to 120 units (reduce the total pollution by 130 units), so it gives each firm 40 tradable pollution permits.

1. Who buys permits and how many do they buy?
2. Who sells permits and how many do they sell?
3. What is the total cost of pollution reduction in this situation?
4. What is the total costs of pollution reduction if the pollution permits could not be traded?
5. Will the total costs of pollution reduction change if all the 120 pollution permits were initially distributed to firm A?

Ans:

1. **Firm B will buy. 40 units.**
2. **Firm C will sell. 40 units. (price** $\in (10, 20)$**)**
3. **Firm C reduce pollution by 70 units, which in total costs \$700. Firm A reduce pollution by 60 units, which in total costs \$20*60=\$1200. The total costs of reducing pollution by 130 units is \$700+\$1200=\$1900.**
4. **If no trading is allowed for, each of the firm pollute 40 units. The pollution reduction costs is \$20*60+\$30*40+\$10*30=\$2700.**
5. **No.**

Problem 2 (15 Points + 4 Bonus Points)

The tragedy of the commons – a term coined by ecologist Garrett Hardin – describes a scenario in which individuals acting in rational pursuit of their self-interest lead to the over-exploitation of common-pool resources. In reality, however, many local communities have successfully managed their shared resources without incurring the tragedy of the commons.
In 2009, Elinor Ostrom won the Nobel Memorial Prize in Economic Sciences[1] for her research that demonstrate how people often can cooperate effectively to build rules and norms to ensure a sustainable and equitable management of shared resources:

> "*Elinor Ostrom has challenged the conventional wisdom that common property is poorly managed and should be either regulated by central authorities or privatized. Based on numerous studies of user-managed fish stocks, pastures, woods, lakes, and groundwater basins, Ostrom concludes that the outcomes are, more often than not, better than predicted by standard theories. She observes that resource users frequently develop sophisticated mechanisms for decision-making and rule enforcement to handle conflicts of interest, and she characterizes the rules that promote successful outcomes." – The Royal Swedish Academy of Sciences*

Answer the following questions:

1. Common resources are (excludable/non-excludable) and (rival/non-rival) in consumption.

   `non-excludable; rival`

2. According to Hardin, what are the measures that we have to rely on in order to address the tragedy of the commons problem?

   `Government regulation (taxation, cap & trade, command-and-control), privatization`

3. Explain in what sense the tragedy of the commons is a negative externality problem.

   `By consuming the common resource, each individual reduces the resource available to others (without paying)`

4. Explain in what sense the tragedy of the commons is a Prisoner's dilemma problem. (2 Bonus Points)

   `A Prisoner's dilemma game is a game in which individuals do not cooperate by assumption and, by pursuing their self-interest, take actions that do not lead to the social optimum. This is in essence Hardin's tragedy of the commons model. Importantly, Hardin's model rules out by assumption the possibility that people might communicate and find ways to cooperate.`

[1] along with Oliver Williamson

5. Suppose that as a result of over-consumption, a common resource is depleted for the next generation (i.e., for this generation, they get to enjoy the maximum output from the common resource). Explain under what conditions this outcome is socially optimal rather than a tragedy (hint: over-consumption is a *normative* statement).

   If individuals do not care about the next generation, then this outcome is socially optimal (for them).

   The statement that common resources tend to be over-consumed is a normative statement that implicitly assumes a social optimum based on an assumption of how people care about the future vs. the now.

6. Hardin's model does not distinguish between truly *open access resources* (resources owned by no group of people) and *shared resources* (resources owned by a group of people, though by no one individual). In practice, we observe small communities have often successfully managed their *shared resources*. According to Ostrom,

   > *"The prediction of resource collapse is supported in very large, highly valuable, open-access systems when the resource harvesters are diverse, do not communicate, and fail to develop rules and norms for managing the resource. The dire predictions, however, are not supported under conditions that enable harvesters and local leaders to self-organize effective rules to manage a resource or in rigorous laboratory experiments when subjects can discuss options to avoid overharvesting. "*

   Use the Coase theorem to explain this finding.

   When transaction costs are low, the efficient outcome will arise in the presence of externa so long as property rights are sufficiently clear. Here, *open access resources* have no clear ownership, but *shared resources* have: they are collectively owned by the local comm Thus if the community is not too large (i.e. low transaction costs), it is possible for them to solve the negative externality problem by themselves.

7. In reality, societies often develop moral principles and cultural norms that encourage cooperation, altruistic behavior, and behavior that contribute to the collective good, which cannot be easily explained by standard economic models based on rational self-interest[2]. Can you give some examples of these norms and principles that have contributed toward the successful management of shared resources by local communities? (2 Bonus Points)

   Any norms and principles that encourage husbandry, altruism, preservation of shared resour
   respect for nature, consideration for future generations, and discourage avarice, over-cons
   etc.

[2]In standard game theoretic models, to the extent that people cooperate with one another, it is because they calculate that cooperation will serve their individual self-interest better than if they act on their own.

Problem 3 (15 points)

The table below contains data for the country of Wrexington for the year 2008.

Total income	$5731
Household purchases of durable goods	$1108
Household purchases of nondurable goods	$702
Household purchases of non-education services	$203
Household purchases of education services	$302
Household purchases of new housing	$816
Purchases of capital equipment	$333
Inventory changes	$75
Purchases of new structures	$267
Depreciation	$401
Local government spending on goods and services	$236
Local government spending on goods and services	$419
Federal government spending on goods and services	$1182
Transfer payments	$707
Foreign purchases of domestically produced goods	$217
Domestic purchases of foreign goods	$129

1. What was Wrexington's GDP in 2008? (3 Points)
2. What was Wrexington's consumption in 2008? (3 Points)
3. What was Wrexington's investment in 2008? (3 Points)
4. What were Wrexington's government purchases in 2008? (3 Points)
5. What were Wrexington's net exports in 2008? (3 Points)

Ans:

1. **$5731.**
2. **$2315.**
3. **$1491.**
4. **$1837.**
5. **$88.**

Problem 4 (15 points)

In a simple economy, people consume only 2 goods, food and clothing. The market basket of goods used to compute the CPI consists of 50 units of food and 10 units of clothing. In the year 2020, the price per unit for food is 4 Yuan and the price per unit for clothing is 10 Yuan. In the year 2021, the price per unit for food is 6 Yuan and the price per unit for clothing is 20 Yuan.

1. From 2020 to 2021, what are the percentage increases in the price of food and in the price of clothing?
2. Assume 2020 is the base year. Calculate the CPI of the year 2020 and 2021. Based upon your calculation, what is the percentage increase in the CPI?
3. Do these price changes affect all consumers to the same extent? Explain.

Ans:

1. **The price of food increases by 50 oercent. The price of clothing increase by 100 percent.**
2. **The CPI in 2020 is 100 Yuan. The CPI in 2021 is 500/3 Yuan. The percentage increase in CPI is 66.7 percent.**
3. **Because the price of clothing increased relatively more than the price of food, people who purchase a lot of clothing and little food became worse off relative to people who purchase a lot of food and little clothing.**