

## CHAPTER 14

# Natural Resources and Energy Economics

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1. As of 2008, the world's population is approximately:

A) 6.6 billion.  
B) 4.2 billion.  
C) 10.8 billion.  
D) 1.2 trillion.

Ans: A Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

2. Relative to 1800, the living standard of the average person today in Canada. is about \_\_\_\_\_ times higher.

A) 5.  
B) 12.  
C) 20.  
D) 42.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

3. Relative to 1800, today in the world there are:

A) more people but lower-per-capita consumption.  
B) more people but the same per-capita consumption.  
C) more people and higher per-capita consumption.  
D) the same number of people but higher per-capita consumption.

Ans: C Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

4. Whose *An Essay on the Principle of Population* argued that human living standards could only temporarily rise above subsistence?

A) Adam Smith  
B) Thomas Malthus  
C) John Maynard Keynes  
D) Alfred Marshall

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

5. What is the relationship between living standards and birthrates?

A) The relationship is negative at low levels of income, but becomes increasingly positive as incomes rise.  
B) They are unrelated.  
C) The relationship is positive (directly related).  
D) The relationship is negative (inversely related).

Ans: D Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

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6. The total fertility rate necessary to keep the population constant is approximately equal to:

A) 1.0.  
B) 1.5.  
C) 2.1.  
D) 3.0.

Ans: C Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

7. The total fertility rate:

A) measures the average number of children that a woman is expected to have during her lifetime.  
B) measures the average number of children that each couple is expected to have during their lifetime.  
C) equals the rate of population change over time.  
D) rises as income rises.

Ans: A Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Definition

8. If a country has a total fertility rate of 1.8, then all else equal, we would expect:

A) population in that country to rise over time.  
B) population in that country to fall over time.  
C) the replacement rate to also equal 1.8.  
D) the population to remain stable over time.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

9. A total fertility rate of 1.0 will cause the:

A) population to remain stable.  
B) population to double in one generation.  
C) population to collapse in one generation.  
D) next generation to be half the size of the current generation.

Ans: D Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

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10. A rising standard of living will:
- A) necessarily reduce the population by reducing the birthrate.
  - B) increase the birthrate.
  - C) reduce the birthrate, but population may continue to grow if the death rate falls more quickly.
  - D) reduce the birthrate initially, but will increase the birthrate significantly at higher levels of income as people can afford to have more children.

Ans: C Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

11. Population will necessarily fall if the:
- A) birthrate exceeds the replacement rate.
  - B) replacement rate exceeds the birthrate.
  - C) birthrate exceeds the total fertility rate.
  - D) total fertility rate exceeds the birthrate.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

12. Many demographers expect world population to:
- A) increase exponentially into the foreseeable future.
  - B) decline from its current level in the next two decades.
  - C) peak at 9 billion or fewer, and then decline.
  - D) plateau at around 7.5 billion, and then continue to increase rapidly.

Ans: C Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328 Subtopic: Population growth Type: Application

13. Rapid population growth since 1800 has occurred primarily because of:
- A) a significant increase in total fertility rates as living standards have risen.
  - B) a significant reduction in death rates as living standards have risen.
  - C) a significant increase in replacement rates as living standards have risen.
  - D) all of these.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328-329 Subtopic: Population growth Type: Application

## Chapter 14 Natural Resources and Energy Economics

14. Which of the following statements is true about falling birthrates?
- A) They tend to lag behind falling death rates, allowing population growth to continue for at least one or two more generations.
  - B) They tend to precede declines in death rates, causing a temporary dip in population before it stabilizes in a generation or two.
  - C) They tend to lag behind declining standards of living.
  - D) They always cause population to decline.

Ans: A Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328-329 Subtopic: Population growth Type: Application

15. Which of the following nations has a total fertility rate that would suggest a declining population?
- A) Hong Kong
  - B) Japan
  - C) Germany
  - D) All of these nations.

Ans: D Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328-329 Subtopic: Population growth Type: Application

16. Which of the following nations has a total fertility rate that would suggest that its next generation will only be half the size of the current generation?
- A) Hong Kong
  - B) Australia
  - C) Sweden
  - D) All of these nations.

Ans: A Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 328-329 Subtopic: Population growth Type: Application

17. For the past 150 years, the:
- A) supply and demand for productive resources have grown at the same rate.
  - B) supply of productive resources has grown faster than the demand for those resources.
  - C) demand for productive resources has grown faster than the supply of those resources.
  - D) supply of productive resources has increased, while the demand has fallen.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 329-330 Subtopic: Resource consumption per person Type: Application

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18. *The Economist* magazine's Commodities Price Index tracks the prices of the most:
- A) important finished goods that are traded internationally.
  - B) important minerals that are traded internationally.
  - C) important productive resources that are traded internationally.
  - D) heavily traded agricultural-based products.

Ans: C Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 330 Subtopic: Resource consumption per person Type: Application

19. World commodity prices over the past 150 years have:
- A) steadily decreased in both the short run and long run.
  - B) decreased in the long run despite occasional short-run increases.
  - C) remained constant in the long run despite occasional short-run fluctuations.
  - D) steadily increased in both the short run and long run.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 330 Subtopic: Resource consumption per person Type: Application

20. Why have commodity prices fallen over the past 150 years?
- A) The demand for productive resources has fallen faster than the supply of those resources.
  - B) The demand for productive resources has grown faster than the supply of those resources.
  - C) The supply of productive resources has increased, while the demand has fallen.
  - D) The supply of productive resources has grown faster than the demand for those resources.

Ans: D Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 331 Subtopic: Resource consumption per person Type: Application

21. Resource demand has grown over time:
- A) because of population growth only.
  - B) because of increased consumption per person only.
  - C) because of both increased population and greater consumption per person.
  - D) despite decreased in population and consumption per person.

Ans: C Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 331 Subtopic: Resource consumption per person Type: Application

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22. Global resource demand has:
- A) remained relatively constant because increased in population have been offset by declining consumption per person.
  - B) declined because of technological progress.
  - C) remained constant because population growth and increased consumption per person have been offset by technological progress.
  - D) increased because population growth and increased consumption per person have more than offset reduced demand due to technological progress.

Ans: D Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 331 Subtopic: Resource consumption per person Type: Application

23. Resource consumption per person in the past decade has:
- A) leveled off or fallen in the richest countries.
  - B) leveled off or fallen for the world as a whole.
  - C) grown in the richest countries as goods and service consumption per person has risen.
  - D) decreased significantly as commodity prices have risen.

Ans: A Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 331 Subtopic: Resource consumption per person Type: Application

24. Over the past decade, in Canada and the United States, per capita consumption of water:
- A) and energy have both increased.
  - B) has increased, while per capita consumption of energy has fallen.
  - C) and energy have leveled off or fallen.
  - D) has fallen, while per capita consumption of energy has increased.

Ans: C Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 331 Subtopic: Resource consumption per person Type: Application

25. Over the past decade, total and per capita water use in both Canada and the United States have:
- A) increased.
  - B) leveled off and fallen, respectively.
  - C) fallen and leveled off, respectively.
  - D) increased and fallen, respectively.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 331 Subtopic: Resource consumption per person Type: Application

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26. Per capita energy use in Canada in 2008 was:

- A) 100 million BTUs..
- B) over 400 million BTUs.
- C) 200 million BTUs.
- D) 50 million BTUs.

Ans: B Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom  
Page: 331 Subtopic: Resource consumption per person Type: Application

27. The study of how people deal with energy scarcity is known as:

- A) power economics.
- B) utility economics.
- C) energy economics.
- D) natural resource economics.

Ans: C Level: Easy Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Definition

28. Energy economics is concerned with:

- A) attempting to find and exploit low cost energy sources.
- B) per capita energy demand of an economy.
- C) reducing energy costs for producers and consumers.
- D) all of these.

Ans: D Level: Easy Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Application

29. In energy economics, "BTU" stands for:

- A) Boiling Temperature Unit.
- B) Base Tax Utility.
- C) British Thermal Unit.
- D) Base Technology Unit.

Ans: C Level: Easy Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Definition

30. A BTU is the amount of energy needed to:

- A) raise the temperature of one pound of water by one degree Fahrenheit.
- B) boil one gallon of water for one minute.
- C) raise the air temperature one degree Celsius for one hour.
- D) raise the temperature of one pint of water by one degree Celsius.

Ans: A Level: Easy Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Definition



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31. ACME Corporation used to produce \$50 worth of goods (in year 2000 dollars) per million BTUs used. Now it produces \$60 worth of goods (in year 2000 dollars) per million BTUs. Based on this, we can conclude:
- A) nothing about ACME's energy efficiency.
  - B) that ACME's energy efficiency has declined.
  - C) that ACME's energy efficiency has improved.
  - D) that ACME is using a single energy source and achieving economies of scale in production.

Ans: C Level: Easy Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Application

32. To achieve economic efficiency in energy use, an economy:
- A) often uses a variety of energy sources.
  - B) must use the single energy source in which it can achieve economies of scale.
  - C) should use all energy sources in equal proportion.
  - D) should only use domestically produced energy.

Ans: C Level: Moderate Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Application

33. Power plants with the lowest operating costs tend to:
- A) have the lowest fixed costs in terms of construction.
  - B) have the highest fixed costs in terms of construction.
  - C) operate on the smallest scale of energy production.
  - D) generate the cleanest energy.

Ans: B Level: Moderate Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Application

## Chapter 14 Natural Resources and Energy Economics

Energy Source	Maximum Capacity (per plant)	Cost of Building Power Plant (in millions)	Operating Cost at One-Half Capacity (per kwh)	Operating Cost at Full Capacity (per kwh)
Coal	30 Megawatts	\$50	\$0.20	\$0.05
Natural Gas	20 Megawatts	\$30	\$0.30	\$0.15
Hydroelectric	10 Megawatts	\$15	\$0.50	\$0.20

34. Suppose a city's energy demand is 30 megawatts during off-peak times, and 40 megawatts at its peak. The city has been purchasing electricity from an outside company but has decided to build its own power plants to satisfy all of its energy demand. The city can choose to build one or more plants to generate the needed electricity. There are three types of plants: coal, natural gas, and hydroelectric. The three types of plants face the costs appearing in the table above. Assuming the city's power needs will not change in the foreseeable future, to achieve the lowest cost of power generation, the city should build:
- A) two coal-fired plants.
  - B) two natural gas plants.
  - C) one coal-fired plant and one hydroelectric plant.
  - D) four hydroelectric plants.

Ans: C Level: Moderate Main Topic: 14.2 Energy economics  
Page: 332 Subtopic: Efficient energy use Type: Application

35. Other things equal, biodiesel becomes economically viable (as or less costly than using oil) when oil prices reach \_\_\_\_\_ or more per barrel.
- A) \$60
  - B) \$80
  - C) \$100
  - D) \$120

Ans: B Level: Easy Main Topic: 14.2 Energy economics  
Page: 332-333 Subtopic: Running out of energy? Type: Application

36. Other things equal, ethanol made from corn becomes economically viable (as or less costly than using oil) when oil prices reach \_\_\_\_\_ or more per barrel.
- A) \$60
  - B) \$80
  - C) \$100
  - D) \$120

Ans: A Level: Easy Main Topic: 14.2 Energy economics  
Page: 333 Subtopic: Running out of energy? Type: Application

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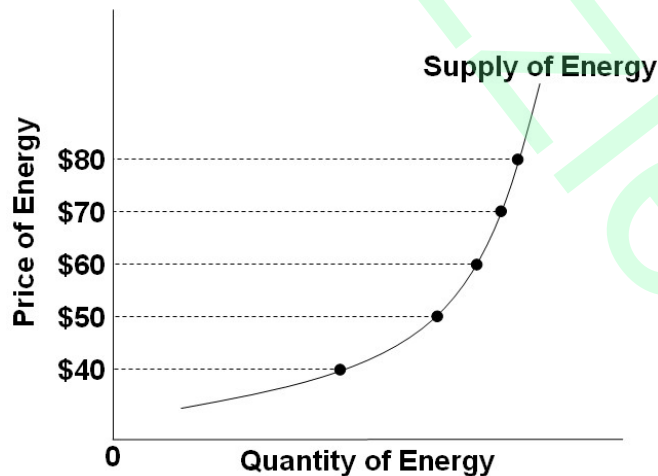
37. Other things equal, extracting oil from shale becomes economically viable (as or less costly than using conventionally extracted oil) when oil prices reach \_\_\_\_\_ or more per barrel.
- A) \$80
  - B) \$60
  - C) \$50
  - D) \$40

Ans: C Level: Easy Main Topic: 14.2 Energy economics  
Page: 333 Subtopic: Running out of energy? Type: Application

38. Alternative fuels become more economically viable as:
- A) the demand for oil decreases.
  - B) subsidies for alternative fuels are removed.
  - C) oil exploration and drilling technology improve.
  - D) the price of oil rises.

Ans: D Level: Easy Main Topic: 14.2 Energy economics  
Page: 333 Subtopic: Running out of energy? Type: Application

Use the following diagram to answer questions: 39-41



39. Refer to the diagram above. Assuming it represents the overall supply of energy, at what per barrel price of oil does the extraction of shale oil become economically viable?
- A) \$40
  - B) \$50
  - C) \$60
  - D) \$70

Ans: B Level: Easy Main Topic: 14.2 Energy economics  
Page: 333 Subtopic: Running out of energy? Type: Graphic

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40. Refer to the diagram above. Assuming it represents the overall supply of energy, at what per barrel price of oil does the production of corn-based ethanol become economically viable?
- A) \$40
  - B) \$50
  - C) \$60
  - D) \$70

Ans: C Level: Easy Main Topic: 14.2 Energy economics  
Page: 333 Subtopic: Running out of energy? Type: Graphic

41. Refer to the diagram above. Assuming it represents the overall supply of energy, at what per barrel price of oil does the production of biodiesel become economically viable?
- A) \$50
  - B) \$60
  - C) \$70
  - D) \$80

Ans: D Level: Easy Main Topic: 14.2 Energy economics  
Page: 333 Subtopic: Running out of energy? Type: Graphic

42. Productive inputs capable of replacing or renewing themselves if harvested at moderate rate are known as:
- A) renewable natural resources.
  - B) natural capital.
  - C) non-renewable natural resources.
  - D) fossil fuels.

Ans: A Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 334-335 Type: Definition

43. Productive inputs that are actually or virtually fixed in supply are known as:
- A) renewable natural resources.
  - B) fossil fuels.
  - C) non-renewable natural resources.
  - D) alternative fuels.

Ans: C Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 334-335 Type: Definition

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44. Which of the following is considered a renewable natural resource?
- A) forests
  - B) coal
  - C) petroleum
  - D) iron

Ans: A Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 334-335 Type: Definition

45. Which of the following is considered a renewable natural resource?
- A) natural gas
  - B) copper
  - C) solar power
  - D) coal

Ans: C Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 334-335 Type: Definition

46. Which of the following is considered a non-renewable natural resource?
- A) solar power
  - B) coal
  - C) oceans
  - D) forests

Ans: B Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 334-335 Type: Definition

47. According to the concept of present value, a \$50 barrel of oil today is worth:
- A) less than a \$50 barrel in 2 years.
  - B) more than a \$50 barrel in 2 years.
  - C) the same as a \$50 barrel in 2 years.
  - D) the same as a \$50 barrel in 2 years, but only if there is no inflation during those 2 years.

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 335 Subtopic: Using present value to evaluate future possibilities  
Type: Calculation

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48. A resource's present value is:
- A) greater than its value in the future.
  - B) less than its value in the future.
  - C) the same as its value in the future.
  - D) depending on how slowly it is extracted.

Ans: B Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 335 Subtopic: Using present value to evaluate future possibilities  
Type: Application

49. Unless people can benefit from conservation, there is a temptation to:
- A) delay resource extraction as long as possible.
  - B) extract and use resources at a constant rate.
  - C) extract and use resources as quickly as possible.
  - D) ban the extraction of non-renewable resources.

Ans: C Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 335-336 Subtopic: Using present value to evaluate future possibilities  
Type: Application

50. When the benefits of conservation and future use are excluded from a cost-benefit analysis, there is a tendency to:
- A) more efficiently allocate resources.
  - B) overvalue future resources by considering them "priceless".
  - C) stop resource extraction.
  - D) extract and use resources as quickly as possible.

Ans: D Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 335-336 Subtopic: Using present value to evaluate future possibilities  
Type: Application

51. A profit maximizing company should not extract any of a particular non-renewable resource in the present if:
- A) the total cost exceeds the market price of the resource.
  - B) the extraction cost exceeds the market price of the resource.
  - C) the user cost exceeds the current market price of the resources.
  - D) any of these conditions occur.

Ans: D Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336 Subtopic: Nonrenewable resources Type: Application

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52. The *user cost* of extracting a non-renewable resource is:
- A) the sum of the dollar expenditures incurred to extract the resources.
  - B) the cost of not being able to extract it in the future if it is extracted and sold in the present.
  - C) the selling price of the resource to the companies using it to produce goods and services.
  - D) directly proportional to how much of the non-renewable resource remains.

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336 Subtopic: Nonrenewable resources Type: Definition

53. The cost of not being able to extract and sell a non-renewable resource in the future (because it is being extracted in the present) is known by natural resource economists as the:
- A) extraction cost.
  - B) future cost.
  - C) conservation cost.
  - D) user cost.

Ans: D Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 336 Subtopic: Nonrenewable resources Type: Definition

54. The *user cost* of extracting a **non-renewable** resource is:
- A) inversely related to how much of the resource remains.
  - B) directly related to how much of the resources remains.
  - C) unrelated to how much of the resource remains.
  - D) inversely related to the expected future price of the resource.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336 Subtopic: Nonrenewable resources Type: Application

The table below show the quantity of gold bars ( $Q_b$ ) in thousands, the extraction cost for each thousand bars (in millions of dollars), and user cost of each thousand bars (in millions of dollars) facing the OZ Mining Company this year.

Quantity of Gold Bars (in thousands)	Extraction Cost (in millions of dollars)	User Cost (in millions of dollars)
0	\$10	\$5
1	15	5
2	20	5
3	25	5
4	30	5
5	35	5

## Chapter 14 Natural Resources and Energy Economics

Use the above table to answer questions 55-58:

55. If the current price of a bar of gold is \$25,000, how many bars (in thousands) should OZ extract and sell this year in order to maximize profits?

A) 1  
B) 2  
C) 3  
D) 4

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337 Subtopic: Present use versus future use Type: Application

56. If the price of a bar of gold is \$30,000 this year, how many bars (in thousands) should OZ extract and sell?

A) 2  
B) 3  
C) 4  
D) 5

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337 Subtopic: Present use versus future use Type: Application

57. Suppose that a new government regulation is going to shut down OZ's mining operations one year from now. If the current price per bar of gold is \$25,000, how many bars (in thousands) should OZ extract and sell this year?

A) 3  
B) 4  
C) 5  
D) As many as possible.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337 Subtopic: Present use versus future use Type: Application

58. Suppose that a new government regulation is going to shut down OZ's mining operation one year from now. Assuming that all gold extracted is sold in the same year (cannot be stockpiled for later sale), how will the regulation affect the user cost?

A) It will have no effect on the user cost.  
B) The effect on the user cost cannot be determined.  
C) The user cost will rise because the rate of extraction will rise.  
D) The user cost will become zero because they will not be able to extract in the future.

Ans: D Level: Difficult Main Topic: 14.3 Natural resource economics  
Page: 337 Subtopic: Present use versus future use Type: Application



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59. Higher interest rates will, all else equal:

- A) increase the extraction cost of a resource.
- B) increase the user cost of extracting a resource.
- C) reduce the user cost of extracting a resource.
- D) have no impact on either the user cost or extraction cost of a resource.

Ans: C Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

60. A user cost of zero implies that:

- A) a firm will extract all of a resource in the present.
- B) a firm will extract resources at a faster rate than if the user cost was positive.
- C) a firm will extract resources at a faster rate than if the user cost was negative.
- D) the price of the resource will not change.

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

61. A profit-maximizing company should extract a non-renewable resource in the present up to the quantity where the:

- A) selling price of the resource equals the extraction cost plus the user cost of the resource.
- B) selling price of the resource equals the total cost plus the user cost of the resource.
- C) selling price of the resource equals the extraction cost of the resource.
- D) extraction cost of the resource equals the user cost of the resource.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

62. Extraction costs of a non-renewable resource include the:

- A) cost of removal from the ground only.
- B) cost of removal from the ground plus the cost of preparation for sale.
- C) cost of removal from the ground, the cost of preparation for sale, and the cost of not being able to extract and sell the resource in the future.
- D) cost of removal from the ground plus replanting costs.

Ans: B Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Definition

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63. The optimal extraction level in the present for a non-renewable resource is:
- A) zero.
  - B) where the market price of the resource equals the extraction cost of the last unit.
  - C) where the market price of the resource equals the extraction cost of the last unit plus the user cost of the last unit.
  - D) where the extraction cost of the last unit equals the user cost of the last unit.

Ans: C Level: Easy Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Definition

64. A company's extraction cost curve slopes upward to reflect:
- A) that marginal extraction costs increase as the company extracts more of the resource.
  - B) that user costs rise as the company extracts more of the resource.
  - C) that the price of the non-renewable resource increases as the amount extracted increases.
  - D) all of these.

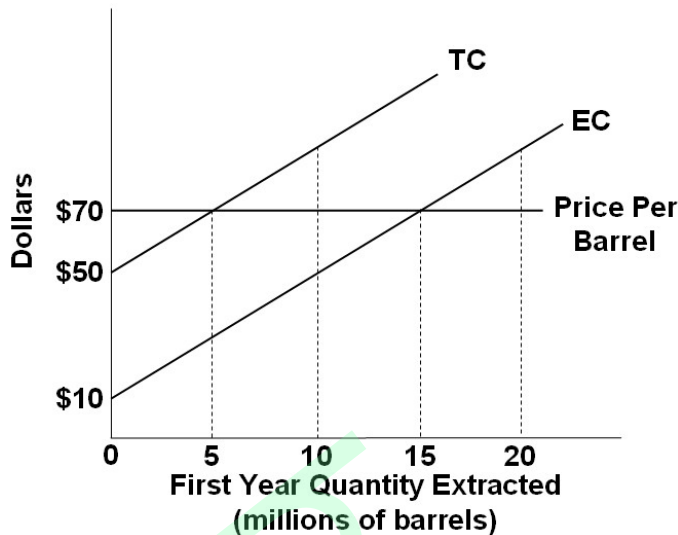
Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

65. A company's upsloping extraction cost curve reflects:
- A) that faster extraction requires firms to acquire more equipment.
  - B) that faster extraction requires firms to hire more workers.
  - C) that faster extraction requires firms to pay overtime to existing workers.
  - D) all of these.

Ans: D Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

## Chapter 14 Natural Resources and Energy Economics

Use the following diagram to answer questions 66-70:



66. Refer to the diagram above, representing Slippery Slope Oil Company. What is the user cost of extracting a barrel of oil this year?
- A) \$20
  - B) \$40
  - C) \$50
  - D) \$70

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Graphic

67. Refer to the diagram above, representing Slippery Slope Oil Company. How many million barrels should Slippery Slope extract and sell this year?
- A) 5
  - B) 10
  - C) 15
  - D) It cannot be determined with the information given.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Graphic

## Chapter 14 Natural Resources and Energy Economics

68. Refer to the diagram above, representing Slippery Slope Oil Company. A \$10 increase in the user cost would shift:
- A) up the extraction cost curve only, and reduce the amount of oil extracted in the present.
  - B) up both the extraction cost and total cost curves, and reduce the amount of oil extracted in the present.
  - C) up the total cost curve only, and reduce the amount of oil extracted in the present.
  - D) down the total cost curve, and increase the amount of oil extracted in the future.

Ans: C Level: Difficult Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Graphic

69. Refer to the diagram above, representing Slippery Slope Oil Company. A \$5 decrease in the user cost would:
- A) decrease the optimal quantity extracted in the present.
  - B) increase the optimal quantity extracted in the present.
  - C) not affect the optimal quantity extracted in the present.
  - D) reduce extraction costs in the present.

Ans: B Level: Difficult Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Graphic

70. Refer to the diagram above, representing Slippery Slope Oil Company. What price of oil would make 15 million barrels the optimal quantity to extract and sell this year?
- A) \$50
  - B) \$70
  - C) \$90
  - D) \$110

Ans: D Level: Difficult Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Graphic

71. Which of the following would cause the present optimal extraction level of a non-renewable resource to fall?
- A) A reduction in the extraction costs.
  - B) A reduction in user costs.
  - C) A reduction in total costs.
  - D) A reduction in the price of the resource.

Ans: D Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

## Chapter 14 Natural Resources and Energy Economics

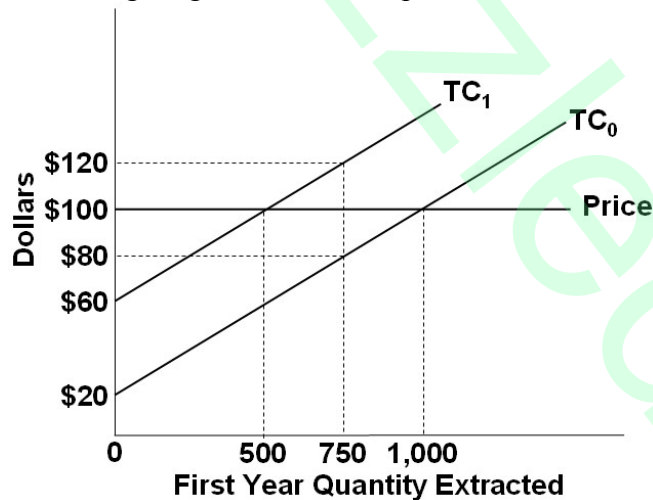
72. Which of the following would cause the present optimal extraction level of a non-renewable resource to rise?
- A) A decrease in the price of the resource.
  - B) An increase in the extraction cost of the resource.
  - C) A decrease in the user cost of the resource.
  - D) A decrease in interest rates.

Ans: C Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

73. Which of the following would cause the present optimal extraction level of a non-renewable resource to fall?
- A) An increase in the present value of expected future profits.
  - B) A decrease in extraction costs.
  - C) A decrease in user costs.
  - D) An increase in the current price of the resource.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 337-338 Subtopic: Present use versus future use Type: Application

Use the following diagram to answer questions 74-79:



74. Refer to the diagram above, assuming that the firm represented is operating on curve  $TC_0$ . What is the user cost of extracting a unit of this resource?
- A) \$20
  - B) \$40
  - C) \$60
  - D) It cannot be determined with the information given.

Ans: D Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Graphic

## Chapter 14 Natural Resources and Energy Economics

75. Refer to the diagram above, assuming that the firm represented is operating on curve  $TC_0$ . How much will the firm extract this year?
- A) 500
  - B) 750
  - C) 1,000
  - D) It cannot be determined with the information given.

Ans: C Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Graphic

76. Refer to the diagram above, assuming that the firm represented is operating on curve  $TC_0$ . If the user cost increases by \$20 at the beginning of the year, the quantity extracted in the first year will:
- A) remain unchanged.
  - B) decline by 250.
  - C) decline by 500.
  - D) decline by 1,000.

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Graphic

77. Refer to the diagram above, assuming that the firm represented is operating on curve  $TC_1$ . If the current price of the resource rises by \$20, the optimal quantity extracted in the first year will:
- A) increase by 250.
  - B) increase by 500.
  - C) decline by 250.
  - D) remain unchanged.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Graphic

78. Refer to the diagram above, assuming that the firm represented is operating on curve  $TC_0$ . A change from  $TC_0$  to  $TC_1$  could be caused by:
- A) a decrease in extraction costs.
  - B) an increase in user costs.
  - C) an increase in the price of the resource.
  - D) a decrease in the price of the resource.

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Graphic

## Chapter 14 Natural Resources and Energy Economics

79. Refer to the diagram above. An increase in extraction costs could be shown by:
- A) an increase in the first year quantity extracted.
  - B) a shift from  $TC_1$  to  $TC_0$ .
  - C) a shift from  $TC_0$  to  $TC_1$ .
  - D) an upward shift of the price line.

Ans: C Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Graphic

80. An increase in the present value of the profit that can be obtained by delaying resource extraction will lead profit-maximizing firms to:
- A) reduce extraction in the present.
  - B) increase the current rate of extraction.
  - C) invest in less extraction equipment.
  - D) hire more workers to support current production.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Application

81. Profit-maximizing extraction companies will attempt to:
- A) extract resources as quickly as possible.
  - B) delay extraction as long as possible.
  - C) find rates of extraction that maximize the flow of profits over time.
  - D) extract resources at a constant rate every year to minimize price fluctuations.

Ans: C Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 338 Subtopic: Present use versus future use Type: Application

82. Which of the following is the best example of a market failure that would lead a firm to extract resources at a rate that is faster than the rate that would maximize its long-term stream of profits?
- A) The market price of the resource rises.
  - B) Weak property rights create fears that firms will not be allowed to extract in the future.
  - C) An increase in market interest rates.
  - D) New information suggests that the demand for the resource will be greater in the future.

Ans: B Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 339 Subtopic: Incomplete property rights lead to excessive present use  
Type: Application

## Chapter 14 Natural Resources and Energy Economics

83. If property rights are weak or uncertain, resource extraction will tend to:
- A) occur faster than the rate that would maximize the long-run stream of profits.
  - B) occur slower than the rate that would maximize the long-run stream of profits.
  - C) occur at the rate that would maximize the long-run stream of profits.
  - D) stop.

Ans: A Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 339 Subtopic: Incomplete property rights lead to excessive present use  
Type: Application

84. Renewable resources:
- A) can never be exhausted permanently.
  - B) can be exhausted if harvest rates exceed replenishment rates for an extended period.
  - C) can be exhausted if replenishment rates exceed harvest rates for an extended period.
  - D) will tend to be over-harvested when they are private property.

Ans: B Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 340 Subtopic: Forest management Type: Application

85. The economic benefits from forests come from:
- A) wood.
  - B) erosion prevention.
  - C) oxygen production.
  - D) all of these

Ans: D Level: Easy Main Topic: 14.4 Renewable resources  
Page: 340 Subtopic: Forest management Type: Application

86. The amount of land covered by forests is:
- A) declining in all nations.
  - B) increasing in all nations.
  - C) increasing in places like the U.S. and Western Europe, has no significance change in Canada and, is declining in countries in South and Central America.
  - D) declining in places like the U.S. and Western Europe, while increasing in countries in South and Central America.

Ans: C Level: Easy Main Topic: 14.4 Renewable resources  
Page: 340 Subtopic: Forest management Type: Application



## Chapter 14 Natural Resources and Energy Economics

87. Some nations are increasing the amount of land covered by forests, while others are experiencing rapid deforestation. According to economists, this is largely because:
- A) different nations have different ethical views regarding treatment of the environment.
  - B) nations with increasing forest cover have poorly enforced or non-existent property rights.
  - C) nations with declining forest cover treat forest as private property or strictly regulated government property.
  - D) nations with increasing forest cover treat forests as private property or strictly regulated government property.

Ans: D Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Forest management Type: Application

Use the following information to answer questions 88-91:

Alex and Ben are both loggers wanting to harvest timber from the same forest. Alex prefers to harvest and replant at a sustainable rate; Ben wants to harvest as many trees as possible to maximize short-run profit, and then move on. They face the same production cost.

88. Refer to the information above. If property rights are poorly enforced or non-existent:
- A) Ben will choose to harvest as quickly as possible, but Alex will choose to harvest more slowly and replant.
  - B) both will harvest trees as quickly as possible, before the other one does.
  - C) both now have an incentive to harvest and replant in a sustainable manner.
  - D) we would expect them to form an agreement on harvesting and replanting.

Ans: B Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Forest management Type: Application

89. Refer to the information above. If property rights are well-defined and enforced:
- A) Alex could buy Ben's part of the land and harvest and replant in a sustainable manner.
  - B) Ben could buy Alex's part of the land and harvest all the timber as quickly as possible.
  - C) incentives to harvest and replant in a sustainable manner are greater than with no property rights.
  - D) all of these could occur.

Ans: D Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Forest management Type: Application

## Chapter 14 Natural Resources and Energy Economics

90. Refer to the information above. The forest is more likely to be harvested and replanted at a sustainable rate if:
- A) property rights are well-defined and enforced.
  - B) property rights are weak or non-existent.
  - C) there is no government protection of property rights and the parties can negotiate a settlement.
  - D) Ben is given sole ownership of the property.

Ans: A Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Forest management Type: Application

91. Refer to the information above. If no explicit property right is given over the forest land, then:
- A) a property right will be established when trees are cut down and brought to market.
  - B) there is no property right over the harvested timber.
  - C) Alex and Ben will likely work out an agreement on harvesting and replanting the land.
  - D) that implies that government owns and regulates its use.

Ans: A Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Forest management Type: Application

92. Which of the following best describes the typical growth pattern of trees for logging?
- A) Trees grow slowly at first, then grow exponentially until cut down.
  - B) Trees grow quickly at first, then continue to grow at a declining rate.
  - C) Trees grow quickly at first, then plateau for a time before resuming an exponential growth pattern.
  - D) Trees grow slowly at first, quickly in the middle years, and then at a diminishing rate into old age.

Ans: D Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Optimal forest harvesting Type: Application

93. Forestry companies typically harvest and replant an area when trees are:
- A) very young and growing slowly.
  - B) middle aged and growing rapidly.
  - C) near the end of their rapid growth period.
  - D) extremely old and about to die anyway.

Ans: C Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Optimal forest harvesting Type: Application

## Chapter 14 Natural Resources and Energy Economics

94. In forestry, in countries where property rights are not secure, there is:
- A) an incentive to harvest trees quickly.
  - B) little incentive to replant trees.
  - C) a tendency for deforestation to occur.
  - D) all of these.

Ans: D Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Optimal forest harvesting Type: Application

95. The forestry companies that have secure property rights over their trees:
- A) harvest their trees regardless of how profitable it is.
  - B) do not harvest them as quickly as possible.
  - C) harvest them as quickly as possible.
  - D) cut only those trees that they are over 100 years.

Ans: B Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 341 Subtopic: Optimal forest harvesting Type: Application

96. In fisheries management, a *fishery* is defined as:
- A) an operation that breeds and releases fish and other marine animals into the wild.
  - B) a stock of fish or other marine animals that can be thought of as a logically distinct group.
  - C) a company that harvests fish or other marine animals.
  - D) a government organization that regulates the harvesting of fish and other marine animals.

Ans: B Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Definition

97. Which of the following is the best example of a fishery?
- A) all marine life along the Great Barrier Reef.
  - B) Pacific salmon.
  - C) Atlantic ocean.
  - D) Crab.

Ans: B Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Definition

## Chapter 14 Natural Resources and Energy Economics

98. A fishery is typically identified by:

- A) location and size.
- B) location and species.
- C) species and size.
- D) species and market value.

Ans: B Level: Easy Main Topic: 14.4 Renewable resources

Page: 342 Subtopic: Optimal fisheries management Type: Definition

99. It is generally easier to prevent deforestation than fishery collapse because:

- A) it is easier to establish and enforce property rights on national lands than in international waters.
- B) there is greater incentive to have sustainable forests than sustainable fisheries.
- C) the demand for wood products has dropped significantly while the demand for fish has grown significantly.
- D) all of these.

Ans: A Level: Moderate Main Topic: 14.4 Renewable resources

Page: 342 Subtopic: Optimal fisheries management Type: Application

100. Property rights for fish from the open ocean:

- A) do not exist.
- B) are established by the United Nations.
- C) exist once the fish are sold at market.
- D) exist once the fish are caught.

Ans: D Level: Easy Main Topic: 14.4 Renewable resources

Page: 342 Subtopic: Optimal fisheries management Type: Application

101. In Atlantic Canada, overfishing caused which of the following fisheries to collapse between 1992-2007?

- A) cod.
- B) Pacific Halibut and Sockeye Salmon.
- C) Blue Crab and Dungeness Crab.
- D) White Shrimp and Brown Shrimp.

Ans: A Level: Easy Main Topic: 14.4 Renewable resources

Page: 342 Subtopic: Optimal fisheries management Type: Application

## Chapter 14 Natural Resources and Energy Economics

102. A fishery collapse:
- A) necessarily happens when harvesting rates increase.
  - B) necessarily happens when reproduction rates fall.
  - C) occurs when harvesting outpaces reproduction for an extended period.
  - D) is irreversible.

Ans: C Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Definition

103. Which of the following policies has succeeded in reducing fishery catch size?
- A) Limiting the length of the catch season.
  - B) Limiting the number of boats allowed in a given area.
  - C) Limiting catch size (TAC).
  - D) All of these.

Ans: C Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Application

104. Which of the following policies has succeeded in reducing fishery catch sizes *without* creating an “arms race” among fishers?
- A) Limiting the length of the catch season.
  - B) Limiting the number of boats allowed in a given area.
  - C) Limiting catch size (TAC).
  - D) Issuing Individual Transferable Quotas (ITQs).

Ans: D Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Application

105. Total Allowance Catch (TAC):
- A) explicitly limits the number of days in a season that particular fish may be caught.
  - B) explicitly limits the number of boats allowed to fish in a particular area.
  - C) explicitly limits the number or tonnage of fish that can be harvested from a particular fishery.
  - D) issues tradable permits limiting the number of fish a particular fisher can catch.

Ans: C Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Definition

## Chapter 14 Natural Resources and Energy Economics

106. In fisheries management, *ITQ* stands for:

- A) International Transferable Quota.
- B) Individual Transferable Quota.
- C) International Tuna Quotas.
- D) Individual Trolling Quotas.

Ans: B Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Definition

107. Under a TAC system, fishing of a particular fishery is halted after:

- A) a predetermined time period.
- B) a predetermined amount of fish has been caught.
- C) a predetermined number of fishing trips have been taken by each registered boat.
- D) the market price of the fish falls below a predetermined trigger price.

Ans: B Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Application

108. Individual Transferable Quotas (ITQs):

- A) promote efficiency and limit catches.
- B) promote efficiency in production but still lead to overfishing.
- C) limit catches but encourage production cost increases that are inefficient.
- D) have failed to limit catches or promote efficiency.

Ans: A Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Application

109. Total Allowable Catch policies and Individual Transferable Quotas both:

- A) limit catch sizes and promote efficiency.
- B) limit catch sizes, but TACs promote inefficiency.
- C) promote efficiency, but only TACs limit catch sizes.
- D) promote efficiency, but only ITQs limit catch sizes.

Ans: B Level: Easy Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Application

110. Individual Transferable Quotas are limited in their effectiveness because:

- A) they are only enforceable within 200 miles of a nation's shores.
- B) government, rather than the market, sets their price.
- C) they encourage wasteful spending by fishers in ITQ areas.
- D) they are not tradable.

Ans: A Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342 Subtopic: Optimal fisheries management Type: Application

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Use the following information to answer questions 111-114:

Kara and Kyle are competing Sockeye Salmon fishers. Both have been allocated ITQs that limit their catch to 2,000 tonnes of Sockeye Salmon each. Kara's cost per tonne is \$8; Kyle's cost per tonne is \$12.

111. Refer to the information above. If the market price of Sockeye Salmon is \$15 per tonne, and Kara and Kyle both catch their quota, their combined profit will be:
- A) \$6,000.
  - B) \$14,000.
  - C) \$20,000.
  - D) \$30,000.

Ans: C Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation

112. Refer to the information above. If the market price of Sockeye Salmon is \$15 per tonne, what is the maximum amount Kara would be willing to pay per tonne for Kyle's ITQs?
- A) \$3
  - B) \$7
  - C) \$8
  - D) \$15

Ans: B Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation

113. Refer to the information above and assume that the market price of Sockeye Salmon is \$15 per tonne. If Kara pays Kyle \$5 per tonne for his ITQs, and if she then catches her new limit of 4,000, their combined profit would be:
- A) \$28,000.
  - B) \$22,000.
  - C) \$20,000.
  - D) \$4,000.

Ans: A Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation

## Chapter 14 Natural Resources and Energy Economics

114. Refer to the information above. If the market price of Sockeye Salmon is \$15 per tonne, what is the minimum amount Kara would have to offer Kyle to convince him to sell Kara his ITQs?
- A) \$3
  - B) \$4
  - C) \$5
  - D) \$7

Ans: A Level: Difficult Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation

Use the following information to answer questions 115-118:

Melanie and Oli are competing Pacific Halibut fishers. Both have been allocated ITQs that limit their catch to 1,000 tonnes of Pacific Halibut each. Melanie's cost per tonne is \$20; Oli's cost per tonne is \$28.

115. Refer to the information above. If the market price of Pacific Halibut is \$40 per tonne, and Melanie and Oli both catch their quota, their combined profit will be:
- A) \$12,000.
  - B) \$22,000.
  - C) \$25,000.
  - D) \$32,000.

Ans: D Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation

116. Refer to the information above. If the market price of Pacific Halibut is \$40 per tonne, what is the maximum amount Melanie would be willing to pay per tonne for Oli's ITQs?
- A) \$20
  - B) \$28
  - C) \$40
  - D) \$12.

Ans: A Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation



## Chapter 14 Natural Resources and Energy Economics

117. Refer to the information above and assume that the market price of Pacific Halibut is \$40 per tonne. If Melanie pays Oli \$10 per tonne for his ITQs and then catches her new limit of 2,000 tonnes, their combined profit would be:
- A) \$28,000.
  - B) \$32,000.
  - C) \$40,000.
  - D) \$54,000.

Ans: C Level: Moderate Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation

118. Refer to the information above. If the market price of Pacific Halibut is \$40 per tonne, what is the minimum amount Melanie would have to offer Oli to convince him to sell Melanie his ITQs?
- A) \$8
  - B) \$10
  - C) \$20
  - D) \$12

Ans: D Level: Difficult Main Topic: 14.4 Renewable resources  
Page: 342-343 Subtopic: Optimal fisheries management Type: Calculation

119. Most economists view economic growth as:
- A) good for the environment because richer economies spend more on environmental protection.
  - B) bad for the environment because richer economies extract resources at a faster rate.
  - C) good for the environment because richer economies produce less chemicals.
  - D) bad for the environment because people in richer economies tend to care less about the environment.

Ans: A Level: Easy Main Topic: The last word Page: 343-344  
Type: Application

120. According to Yale University's Environmental Performance Index (EPI):
- A) countries with lower GDP per person tend to have healthier environments.
  - B) countries with higher GDP per person tend to have healthier environments.
  - C) there is no correlation between GDP per person and environmental quality.
  - D) growth in GDP per person initially improves environmental quality and then gradually reduces it.

Ans: B Level: Easy Main Topic: The last word Page: 343-344  
Type: Application

## Chapter 14 Natural Resources and Energy Economics

121. Yale University's "EPI" stands for:
- A) Environmental Protection Index.
  - B) Ecological Protection Index.
  - C) Environmental Performance Index.
  - D) Ecological Performance Index.

Ans: C Level: Easy Main Topic: The last word Page: 343-344  
Type: Definition

122. In 2005, the countries with the highest scores on the Environmental Performance Index were:
- A) U.S. and Tanzania.
  - B) Sweden and New Zealand.
  - C) Russia and Canada
  - D) Brazil and Australia.

Ans: B Level: Easy Main Topic: The last word Page: 343-344  
Type: Application

123. Human beings consume more both in absolute terms and on a per capita basis than they did 200 years ago.

Ans: True Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 328 Type: Application

124. Thomas Malthus argued that increases in living standards tend to reduce birthrates.

Ans: False Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 328 Type: Application

125. The total fertility rate is the average number of children that a woman is expected to have during her lifetime.

Ans: True Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 328 Type: Definition

126. A total fertility rate of 1.0 is necessary to keep the population constant over time.

Ans: False Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 328 Type: Application

127. Most developed countries have fertility rates less than 2.1.

Ans: True Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 328 Type: Application

## Chapter 14 Natural Resources and Energy Economics

128. Demographers expect world population to decline in the next century.

Ans: True Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 328-329 Type: Application

129. Modernize economies that have declining birthrates may still experience population growth because of rapidly declining death rates.

Ans: True Level: Easy Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 328-329 Type: Application

130. The Economist's Commodity Price Index reveals that the supply of productive resources has increased faster than the demand for decades.

Ans: False Level: Moderate Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 330 Type: Application

131. The demand for productive resources has grown faster than the supply of productive resources for the past 150 years.

Ans: False Level: Moderate Main Topic: 14.1 Resource supplies: Doom or boom?  
Page: 330-331 Type: Application

132. In developed countries, the per capita energy usage has leveled off in recent years. This fact implies that their economies have become increasingly efficient at using energy to produce goods and services.

Ans: True Level: Moderate Main Topic: 14.2 Energy economics Page: 332  
Type: Application

133. Massive changes in energy demand occur over the course of a day.

Ans: True Level: Moderate Main Topic: 14.2 Energy economics Page: 332  
Type: Application

134. In electricity generation, it is most economically efficient to use a single energy source.

Ans: False Level: Moderate Main Topic: 14.2 Energy economics Page: 332-333  
Type: Application

## Chapter 14 Natural Resources and Energy Economics

135. As oil prices rise, alternative energy sources become economically viable.

Ans: True Level: Easy Main Topic: 14.2 Energy economics Page: 332-333  
Type: Application

136. Canada is in imminent danger of running out of energy sources.

Ans: False Level: Easy Main Topic: 14.2 Energy economics Page: 332-333  
Type: Application

137. Renewable natural resources can never be exhausted.

Ans: False Level: Easy Main Topic: 14.3 Natural resource economics Page: 335  
Type: Application

138. Non-renewable natural resources are fixed in supply.

Ans: True Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 335 Type: Application

139. Assuming that interest rates are positive, the present value of an \$80 barrel of oil in 2 years is less than an \$80 barrel today.

Ans: True Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 335 Type: Application

140. Present value allows us to weigh the benefits and costs of using resources today or in the future.

Ans: True Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 335 Type: Definition

141. The user cost of a resource is the market price paid by the buyer of the resource.

Ans: False Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336 Type: Definition

142. Higher user costs imply that a resource should be extracted more quickly.

Ans: False Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336 Type: Application

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143. User cost is defined as the present value of the profit the company would earn if it delayed extraction until next year.

Ans: True Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336 Type: Definition

144. The higher a resource's current price, the more extraction should be delayed to a later period.

Ans: False Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336 Type: Application

145. The total cost of extracting and selling a resource in a given year is the sum of extraction cost and the user cost.

Ans: True Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 336-337 Type: Definition

146. Weak property rights encourage faster extraction than would otherwise maximize the long-term stream of profits.

Ans: True Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 339 Type: Application

147. In the absence of enforceable property rights, there is little incentive to preserve resources for future use.

Ans: True Level: Moderate Main Topic: 14.3 Natural resource economics  
Page: 339 Type: Application

148. The economic benefits of forests include provision of wildlife habitats, erosion prevention, and oxygen production.

Ans: True Level: Easy Main Topic: 14.4 renewable resources Page: 340  
Type: Definition

149. Granting property rights to forest land tends to increase the rate at which the land is deforested.

Ans: False Level: Moderate Main Topic: 14.4 renewable resources Page: 341  
Type: Application

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150. Forestry companies with secure property rights have a greater incentive to harvest and replant in a sustainable manner.

Ans: True Level: Easy Main Topic: 14.4 renewable resources Page: 341  
Type: Application

151. A fishery is a stock of fish or other marine animal thought of as a logically distinct group, and usually identified by its location and species.

Ans: True Level: Easy Main Topic: 14.4 renewable resources Page: 342  
Type: Definition

152. Fish in the open ocean are protected by strong property rights.

Ans: False Level: Easy Main Topic: 14.4 renewable resources Page: 342  
Type: Application

153. TAC policies help reduce overfishing and reduce costs for fishers.

Ans: False Level: Easy Main Topic: 14.4 renewable resources Page: 342  
Type: Application

154. Property rights over fish in the open ocean exist once the fish are caught.

Ans: True Level: Moderate Main Topic: 14.4 renewable resources Page: 342  
Type: Application

155. Fisheries have been overexploited relative to forests primarily because people care more about trees than fish.

Ans: False Level: Moderate Main Topic: 14.4 renewable resources Page: 342  
Type: Application

156. Total Allowable Catch policies promote economic efficiency better than Individual Transferable Quotas.

Ans: False Level: Moderate Main Topic: 14.4 renewable resources  
Page: 342-343 Type: Application

157. ITQs both limit catches and encourage fishing in the least costly way.

Ans: True Level: Moderate Main Topic: 14.4 renewable resources  
Page: 342-343 Type: Application

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158. ITQs generate the most efficient use of resources when everyone keeps and fills their own quotas.

Ans: False Level: Moderate Main Topic: 14.4 renewable resources

Page: 342-343 Type: Application

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