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Environment and Resources Economics

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Part A: True–False Questions

(1) Human wants are limited, but resources are not.

(2) Capital goods are things that are produced and then used to produce other valuable goods or services.

(3) The resources may be product of nature or those things that have been produced by previous generations.

(4) Producers are those who take resources and transform them into usable products or output.

(5) Consumer good is anything that is produced that will be used to produce other goods or services over time.

(6) Resources used to produce capital goods could not have been used to produce consumer goods.

(7) Capital goods must be tangible.

(8) The process of using resources to produce new capital is called investment.

(9) A wise investment in capital is one that yields future benefits that are more valuable than the present cost.

(10) All points below and to the left of the curve represent combinations of capital and consumption goods that cannot be reached.

(11) Points that lie within the shaded area, but that are not on the frontier, represent either unemployment or production inefficiency.

(12) The efficient economy is one that produces the things that people want at the least cost.

(13) The production inefficiency occurs only when a country is producing inside its production possibility frontier.

(14) Points that lie on the production possibility frontier represent points of full employment and efficiency of production.

(15) MRT is the number of units of capital goods you can get by given up one unit of consumer goods.

(16) Economic growth is characterized by an increase in the total output of an economy.

(17) New resources may mean a larger labor force or an increased capital stock.

(18) The production and use of new machinery and equipment increase the productivity of workers.

(19) Improved productivity comes from technological change and innovation, the discovery and application of new, efficient techniques of production.

(20) Economic growth shifts a society's production possibility frontier down and to the right.

(21) Economic growth a rises, from many sources, the two most important of which, over the years, have been the accumulation of capital and technological change.

(22) Technological change comes from research and development that uses resources, and thus it too must be paid for.

(23) Increasing productivity shifts the PPF up to the right.

(24) The rich country devotes a larger portion of its production to consumer goods, while the poor country produces mostly capital goods.

(25) Rich country find it easier to devote resources to the production of capital than poor countries do.

(26) For most goods and services, economic theory represents benefits by a demand curve and costs by a supply curve.

(27) The demand and supply curves show us the marginal benefit and marginal costs – that is, the benefit and costs of producing or consuming one more unit.

(28) The market supply schedule shows how many units of good the producers will be willing to put on the market at various prices.

(29) The market equilibrium, which shows the prices and quantity traded.

(30) The government impose tax on the product that result in positive externalities.

(31) The area under the demand curve shows total cost.

(32) For each unit purchased, the demand curve measures the value of that unit to consumer, while the supply curve reflects the cost to suppliers.

(33) The net social benefit is the amount by which total benefit exceed total cost.

(34) The producer surplus is the difference between their production costs, shown by the supply curve, and the price that they receive.

(35) Resources can be renewable or nonrenewable.

(36) The nonrenewable resources must be allocate between current and future periods.

(37) The marginal net benefit curve for good shows the difference between value to the consumer and cost of supply for each unit of good.

(38) The marginal net benefit is the horizontal difference between the supply curve and the demand curve.

(39) The marginal net benefit is generally largest for the first units, then declines to zero at equilibrium.

(40) The area under the marginal net benefit curve shows total net benefit.

(41) When marginal net benefit is just equal to zero, total net benefit is maximized.

(42) The vertical distance to the intersection point of MNB_1 and PV (MNB_2) shows the user cost at equilibrium.

(43) The dynamic equilibrium reflects both the needs of the present and of the future.

(44) In case that the present net price, plus interest, exceed the probable future net price, she will profit more by investing today.

(45) The theory of optimal depletion mean that extraction and consumption of a unit today involves an opportunity cost.

(46) The first condition of optimal depletion is P=MC.

(47) The second condition of optimal depletion describe the behavior of the opportunity cost over time.

(48) The difference between price and marginal extraction cost is known by user cost or royalty.

(49) Net benefit in a single period is customarily measured as the difference between what consumers are willing to pay for a good and what it costs to produce.

(50) The backstop is just a resource or technology that can provide the same services, but at higher cost, and without risking exhaustion in any meaningful period.

(51) The royalty at t=zero (P_0 – MC) is the difference between the cost of the backstop and the cost of good, discounted back from the switch date.

(52) A pair of countries where one has an absolute advantage over the other in all areas of production will find it impossible to benefit from trade.

(53) An economy that has underemployed resources can still operate on its production possibilities curve.

(54) If Japan can produce more automobiles and more computers than the United States using the same amount of resources, then Japan has an absolute advantage in both activities.

(55) If the opportunity cost of producing one car in Japan is 10 computers and the opportunity cost of producing one car in the United States is 5 computers, then the United States has a comparative advantage in computer production.

(56) Without government intervention, negative externalities are borne directly by the producer of a good or service, so they diminish profit.

(57) The social cost of an activity is equal to the private cost plus the cost of the negative externality.

(58) If steel production causes a negative externality, then the market generates a price for steel that is too low.

(59) By taxing polluters an amount per unit of the good produced equal to the cost of the negative externality, the quantity of pollution generated is reduced.

(60) Typically, if the government chooses to tax polluters, pollution levels fall to zero.

(61) The sink functioning is the capacity to absorb wastes and pollution.

(62) The optimal pollution level is the amount of pollution that exactly balances marginal social benefits and marginal social costs.

(63) The optimal pollution level occurs at intersection of marginal cost of pollution control and marginal cost of pollution damage curves.

(64) MC_D show the marginal costs associated with pollution emissions.

(65) Marginal cost of damage is downward-curving pattern.

(66) Marginal cost of control, rise as pollution levels fall (moving from left to right).

(67) Balancing of marginal control cost with marginal damage cost is known as the equimarginal principle.

Part B: multiple-choice questions

(1) ……is a graph that shows all the combinations of goods and services that can be produced if all of society's resources are used efficiently.

(a) PPF

(b) Supply curve

(c) Demand curve

(d) Indifference curve

(2) The production inefficiency occur when …….

(a) A country is producing inside its production possibility frontier

(b) A country is producing a combination of goods and services that does not match the wants of its people

(c) A and b

(d) None of the above

(3) Any of the following may result in inefficient production……..

(a) The production without specialization

(b) The production away tastes

(c) Monopoly

(d) all of the above

(4) …… is the number of units of capital goods you can get by given up one unit of consumer goods.

(a) The slope of indifference curve

(b) The slope of PPF

(c) The slope of BL

(d) None of the above

(5) Economic growth occurs …

(a) When a society acquires new resources

(b) When society learns to produce more with existing resources

(c) a and b

(d) None of the above

(6) PPF curve is ……

(a) Concave to origin

(b) Convex to origin

(c) Horizontal

(d) None of the above

(7) When PPF is concave the opportunity cost is ……..

(a) Increasing

(b) Decreasing

(c) Remaining the same

(d) None of the above

(8) The marginal net benefit is ……

(a) The difference between price and cost

(b) The sum of price and cost

(c) The cost

(d) The price

(9) The marginal net benefit at equilibrium is ……..

(a) Zero

(b) Positive

(c) Negative

(d) a and b

(10) The marginal net benefit at the right of equilibrium is ……..

(a) Zero

(b) Positive

(c) Negative

(d) a and c

(11) The marginal net benefit at the left of equilibrium is……

(a) Zero

(b) Positive

(c) Negative

(d) a and b

(12) The total net benefit is maximized when MNB is ……

(a) Zero (b) Positive (c) negative (d) a, b

(13) The production possibility curve is straight line when it has……

(a) A decreasing opportunity cost

(b) A constant opportunity cost

(c) An increasing opportunity cost

(d) None of the above

(14) The law of increasing opportunity cost is reflected in the shape of the ……..

(a) PPF is concave to the origin

(b) PPF is convex to the origin

(c) PPF is straight line

(d) PPF is vertical

(15) The growth may occur because of …….

(a) Accumulation of capital

(b) Technological advances

(c) Increase in population

(d) All of the above

(16) More of one good is produced, less of the other goods is produced, this concept refer to ……..

(a) Opportunity cost

(b) Economic growth

(c) Unemployment

(d) Inefficiency

(17) Scarcity requires that people must……

A) Trade. B) Compete. C) Cooperate. D) Make choices.

(18) As an economic concept, scarcity applies to

A) Neither time nor money.

B) Both money and time.

C) Time but not money.

D) Money but not time.

(19) Human capital is ……..

A) Machinery that meets or exceeds federal safety standards for use by humans.
B) All capital owned by individuals or corporations, but not by governments.

C) The skill and knowledge of workers.

D) All capital owned by individuals, but not by corporations or governments.

(20) Which of the following is NOT a factor of production?

A) The water used to cool a nuclear power plant.

B) The wages paid to workers.

C) The effort of farmers raising cattle.

D) The management skill of a small business owner.

(21) Which of the following is NOT a factor of production?

A) A share of stock issued by a firm.

B) A new computer used by a small business owner.

C) A tractor used by a wheat farmer.

D) The time worked by elementary school teachers.

22) An autoworker is considered _____ and earns _____.

A) Labor; wages

B) Labor; rent

C) Capital; rent

D) Entrepreneurship; wages

(23) When a farmer decides to increase the amount of acreage devoted to wheat and grow fewer acres of soybeans, the farmer is facing the

A) "How" tradeoff.

B) Microeconomic question.

C) "What" tradeoff.

D) "For whom" tradeoff.

(24) Because we face scarcity, every choice involves

A) The question "what."

B) Money

C) Giving up something for nothing.

D) An opportunity cost.

(25) Opportunity cost means

A) The accounting cost minus the marginal benefit.

B) The highest-valued alternative forgone.

C) The monetary costs of an activity.

D) The accounting cost minus the marginal cost.

(26) During the summer you have made the decision to attend summer school, which precludes you from working at your usual summer job in which you normally earn $6,000 for the summer. Your tuition cost is $3,000, books and supplies cost $300, and room and board cost $1,000. The opportunity cost of attending summer school is

A) $3,300.

B) $4,300.

C) $6,000.

D) $10,300.

(27) You decide to take a vacation and the trip costs you $2,000. While you are on vacation, you do not report to work where you could have earned $750. The opportunity cost of the vacation is

A) $2,750.

B) $2,000.

C) $750.

D) $1,250.

(28) Misty has the option of purchasing one of three products: Brand A, Brand B, or Brand C. Each costs ten dollars. If she decides that Brand a meets her needs best, then the opportunity cost of this decision is

A) Twenty dollars.

B) Brand A.

C) Brand B plus Brand C.

D) Brand B or Brand C, depending on which is considered the highest-value alternative forgone.

(29) When the government chooses to use resources to build a dam, these sources are no longer available to build a highway. This choice illustrates the concept of

A) A market mechanism.

B) A fallacy of composition.

C) Opportunity cost.

D) Macroeconomics.

(30) The benefit that arises from an increase in an activity is called

A) An incentive.

B) The marginal cost.

C) The marginal benefit.

D) Opportunity cost.

(31) If the cost of a computer falls by a large amount, you have an incentive to _____.

A) Use your friend's computer rather than buy one yourself

B) Avoid buying a new computer because it is now less valuable

C) Take a shorter vacation

D) Buy a new computer

(32) Scarcity is a situation in which _____.

A) Something is being wasted

B) Long lines form at gas stations

C) Some people are poor and others are rich

D) We are unable to satisfy all our wants

(33) From 8 p.m. to 10 p.m., Susan can attend a movie, study, or talk with friends. Suppose that Susan decides to go to the movie but thinks that, if she had not, she would otherwise have talked with friends. The opportunity cost of attending the movie is

A) Two hours of time.

B) Studying.

C) Talking with friends and studying.

D) Talking with friends.

(34) When the government hires people to serve in the army, these people are no longer available to do other work. This choice illustrates the concept of

A) Opportunity cost.

B) A social interest/private interest conflict.

C) Marginal benefit.

D) An incentive.

(35) The need for individuals to make trade-offs results primarily from

a) Marginal cost

b) Scarcity

c) Abundance

d) Free enterprise

(36) A basic assumption of economics is that

a) Wants are unlimited

b) Incentives are irrelevant

c) Consumers are irrational

d) Means are unlimited

(37) Scarcity is the situation results from

a) A gap between imports and exports

b) The irrationality of modern consumers

c) An excessively large labor force

d) Limited resources and unlimited wants

(38) The situation that results from the gap between wants and resources is known as

a) Utility

b) Capital

c) Scarcity

d) Abundance

(39) The factor of production known as land includes

(a) Office buildings

(b) Human capital

(c) Natural resources

(d) Business experience

(40) Land, labor, capital, and entrepreneurship are referred to as

a) Costs and benefits

b) Coincidence of wants

c) Factors of production

d) Goods and services

(41) The amount of money that could be made by working instead of going to college is best described as

a) A fixed cost

b) A sunk cost

c) An opportunity cost

d) An external cost

(42) Which of the following is NOT considered one of the basic factors of production?

a) Revenue

b) Labor

c) Land

d) Capital

(43) The output of production is generally divided into

a) Interest and liability

b) Land and labor

c) Goods and services

d) Inflation and unemployment

(44) Capital goods differ from consumer goods in that

a) Capital goods are used directly by people, whereas consumer goods are used to produce other goods and services

b) Consumer goods are used directly by people, whereas capital goods are used to produce other goods and services

c) Consumer goods are raw materials like rubber and oil, whereas capital goods are finished products

d) Capital goods are raw materials like rubber and oil, whereas consumer goods are finished products

(45) A company that purchases new computers is investing in which factor of production?

a) Land

b) Labor

c) Entrepreneurship

d) Capital

(46) A personal computer

a) Is always a consumer good?

b) Can be either a consumer good or a capital good?

c) Is always a capital good?

d) Is neither a consumer good nor a capital good?

(47) The production possibilities curve

a) Reflects the trade-off between the manufacture of two different goods

b) Reflects the trade-off between unemployment and the rate of inflation

c) Shows how much of a given good firms will supply at each price

d) Shows how much of a given good consumers will demand at each price.

(48) A situation in which people do not have enough resources to satisfy every desire is known as

a) Surplus

b) Shortage

c) Excess

d) Scarcity

(49) All of the following except _____ will result in economic growth.

a) Growth in the labor force

b) Growth in the capital stock

c) Improvements in technology

d) An increase in the unemployment rate.

(50) Capital accumulation is limited in poor countries because

a) Their citizens do not want to work

b) Most of their resources must be devoted to production for subsistence

c) Of the law of increasing costs

d) People in these countries are quite satisfied to be poor

(51) Specialization and division of labor take place at the international level according to the

a) Law of increasing costs

b) Principle of comparative advantage

c) Principle of economic efficiency

d) Rate of new innovation

(52) If the social cost of producing chickens is greater than the private cost, then we can be sure that

a) A positive externality exists

b) Chicken is healthful and more should be produced

c) A negative externality exists

d) The price of chicken is too low

(53) Pollution is an example of market failure because

a) The equilibrium price is higher than the efficient price

b) The equilibrium price is less than the efficient price

c) Property rights are poorly distributed

d) The market does not produce enough of the good

(54) When there are negative externalities, the price should be adjusted so that it is equal to

a) Social cost

b) Private cost

c) The amount of the externality

d) Zero

(55) The social cost curve lies above the supply (private cost) curve for the producer in cases of

a) Positive externalities

b) Negative externalities

c) Public goods

d) Near-public goods

(56) If a per unit tax is imposed on a producer of a good with a negative externality, then the tax shifts the producer's

a) Marginal cost curve to the right

b) Marginal cost curve to the left

c) Total fixed cost to the left

d) Total fixed cost to the right

(57) We may not be able to measure all relevant costs and benefit in economic terms when…….

(a) Multiple pollutants affect the environment.

(b) Cumulative ecosystem damage and degradation is at issue.

(c) Subtle effects of persistent pollutants are poorly understood.

(d) All of the above.

(58) In case that the control cost estimated at higher level than actually occurs, the quantity pollutants is ……..the optimal pollution level.

(a) Higher than

(b) Lower than

(c) Equal

(d) No relation

(59) In case that the control cost estimated at lower level than actually occurs, the quantity pollutants is ……..the optimal pollution level.

(a) Higher than (b) Lower than

(c) Equal (d) No relation

Problems

Problem 1:

Use the following tables to answer the question of (1) to (6)

	India		China	
	Cotton	Equipment	Cotton	Equipment
A	100	1000	50	800
B	200	800	100	600
C	300	500	160	300
D	400	100	200	140

(1) In India, the opportunity cost of moving of point (A) to (B) equal……..

(a) 2 cotton (b) .5 cotton (c) 2 Equipment (d) None of the above

(2) In China, the opportunity cost of moving of point (D) to (C) equal…….

(a) .25 cotton (b) 4 Equipment (c) 4 cotton (d) None of the above

(3) In India, MRTs of moving of point (B) to (C) …….

(a) 3 (b) 2 (c) 1.5 (d) None of the above

(4) Suppose that the economy is at point B in both India and China, any of the following is correct according to absolute advantage…….

(a) India has absolute advantage in only cotton

(b) China has absolute advantage in both goods

(c) India has absolute advantage in both goods

(d) China has absolute advantage in only equipment

(5) Suppose that the economy is at point (D) in both India and China, any of the following is correct according to comparative advantage…….

(a) India should specialize in the production of equipment

(b) China should specialize in the production of cotton

(c) India has comparative advantage in production cotton

(d) China has comparative advantage in production cotton

(6) Suppose that India produce at point (B) and China produce at point (D) any of the following may occur……..in the future.

(a) India PPF shift to right faster than China PPF

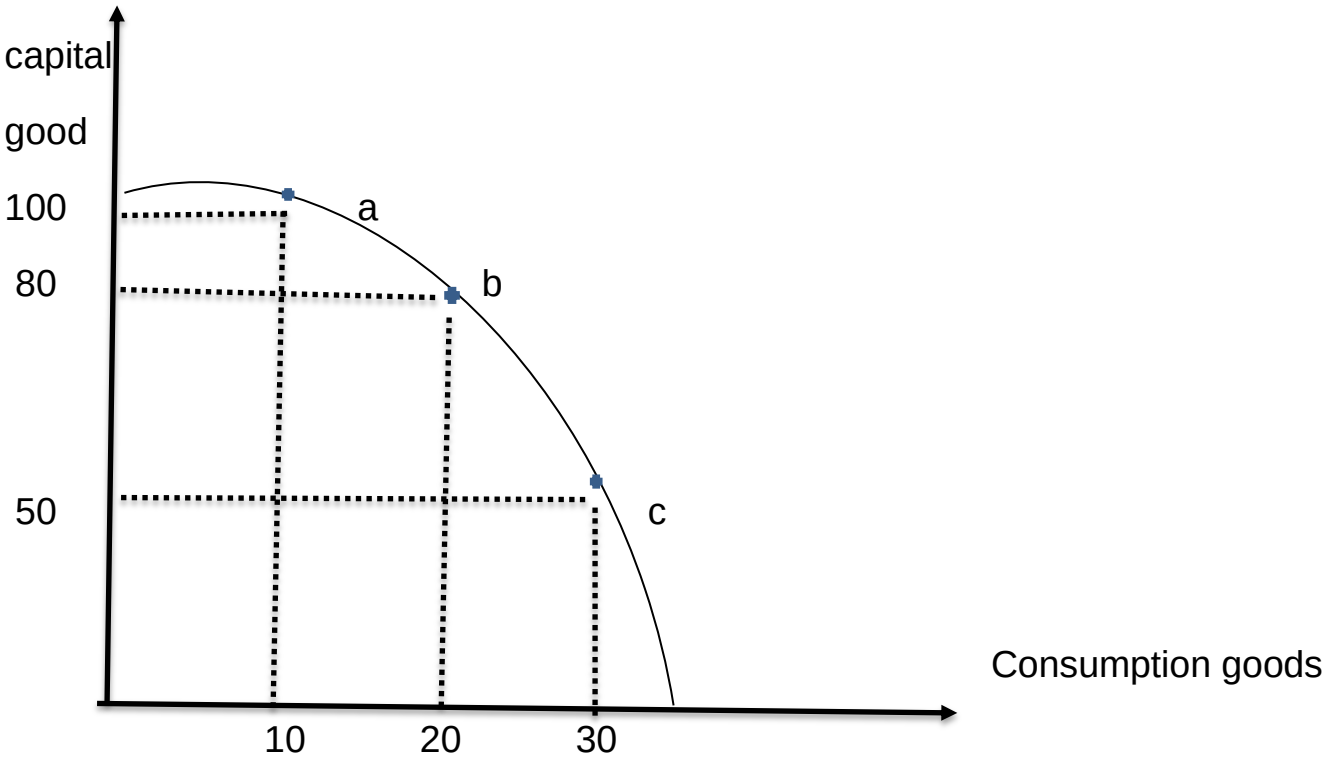
(b) China PPF shift to right faster than India PPF

(c) Two countries grow with the same rate

(d) None of the above

Problem 2:

Use the following figure to answer on the question of (7) to (10)



(7) The opportunity cost of moving of point (a) to (b) is……..

(a) 1 (b) 2 (c) 10 (d) None of the above

(8) The opportunity cost of moving of point (b) to (c) is……..

(a) 10 (b) 2 (c) 3 (d) None of the above

(9) The opportunity cost of moving of point (b) to (a)……

(a) .5 (b) 2 (c) 3 (d) None of the above

(10) If EU is at point (c) and US is at point (b) any of the following is correct ……..

(a) EU will grow faster than US in the future

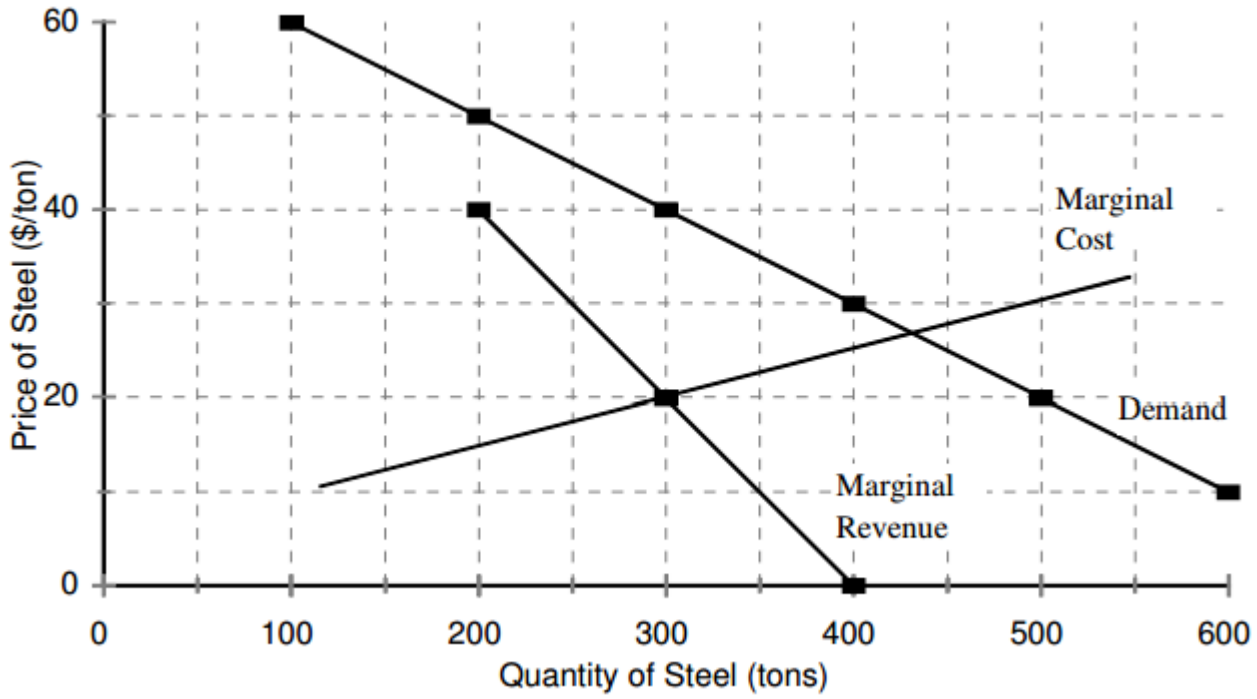
(b) US will grow faster than EU in the future

(c) Both will grow at the same rate

(d) None of the above

Problem 3:

According to the following figure answer on the following question (11) to (14)



(11) Suppose that a steel firm is a monopoly and has the demand, marginal revenue, and marginal cost functions shown in the graph. What price and output combination will the monopoly select?

(a) Q=300, P=20 (b) Q=300, P=40

(c) Q=400, P=30 (d) None of the above

(12) Suppose the production of steel generates water pollution in a nearby river that costs a constant $10 per ton of steel produced. What is the size of the negative externality?

(a) 3000 $ (b) 4000 $

(c) 10 $ (d) None of the above

(13) If a tax equal to the negative externality is imposed on each unit of steel produced, what price will the monopolist charge and how much steel will be produced?

(a) Q= 300, P= 40 (b) Q= 260, P= 43

(c) Q= 200, P= 50 (d) None of the above

(14) After imposing tax, what is the size of the negative externality?

(a) 3000 (b) 2000

(c) 2600 (d) None of the above

Problem 4:

Suppose that there are just 10 barrels of oil in the ground In total, that the (constant) marginal cost of extraction is **MC = 2** per barrel, that the demand in period t (t = 0,1) is given by the equation $\mathbf{P_T = 10 - Y_T}$ where P is price and Y is extractive output, and that the rate of discount is **r = 10%**

<u>According above information answer on question of (15) to (20)</u>

(15) What allocation of output over the two period will yield the greatest net benefit from the oil?

(a) $Y_0 = 2$, $Y_1 = 8$ (b) $Y_0 = 5.14$, $Y_1 = 4.86$

(c) $Y_0 = 8$, $Y_1 = 2$ (d) None of the above

(16) What is the opportunity cost (the royalty) in the first period?

(a) 2.86 (b) 3.14

(c) 4.86 (d) None of the above

(17) What is the opportunity cost (the royalty) in the second period (discounted)?

(a) 2.86 (b) 3.14

(c) 4.86 (d) None of the above

(18) What is the opportunity cost (the royalty) in the second period (undiscounted)?.....

(a) 2.86 (b) 3.14

(c) 4.86 (d) None of the above

(19) What is the price in the first period?

(a) $P_0 = 5.14$ (b) $P_0 = 2.86$

(c) $P_0 = 4.86$ (d) None of the above

(20) What is the price in the second period?

(a) $P_1 = 5.14$ (b) $P_1 = 2.86$

(c) $P_1 = 4.86$ (d) None of the above

Problem 5:

Suppose that there are just 100 tons of gold in the ground In total, that the (constant) marginal cost of extraction is **MC = 10** per ton, that the demand in period t (t = 0,1) is given by the equation $\mathbf{P_T = 200 - 2Y_T}$ where P is price and Y is extractive output, and that the rate of discount is **r = 20%**

<u>According above information answer on the questions of (21) to (26):</u>

(21) What allocation of output over the two period will yield the greatest net benefit from the gold?

(a) $Y_0 = 80$, $Y_1 = 20$ (b) $Y_0 = 20.25$, $Y_1 = 79.75$

(c) $Y_0 = 54.092$, $Y_1 = 45.908$ (d) None of the above

(22) What is the opportunity cost (the royalty) in the first period?

(a) 81.82 (b) 98.18

(c) 45.908 (d) None of the above

(23) What is the opportunity cost (the royalty) in the second period (discounted)?

(a) 81.82 (b) 98.18

(c) 45.908 (d) None of the above

(24) What is the opportunity cost (the royalty) in the second period (undiscounted)?

(a) 81.82 (b) 98.18

(c) 45.908 (d) None of the above

(25) What is the price in the second period?

(a) $P_0 = 54.092$ (b) $P_0 = 108.18$

(c) $P_0 = 91.82$ (d) None of the above

(26) What is the price in the second period?

(a) $P_1 = 45.908$ (b) $P_1 = 108.184$

(c) $P_1 = 91.82$ (d) None of the above

Problem 6:

Suppose that the company produce the product (X) that emit pollution for the community, the company earn benefits on each unit produced **MB = 200 – 2Q** and the community incur damage **MC = 100 +3Q**

<u>According above information answer on the questions of (27) to ():</u>

(27) What is the optimal level of pollution unit?

(a) 20 (b) 40 (c) 160 (d) None of the above

(28) How much the company can afford to pay for each unit of pollution?

(a) 20 (b) 40 (c) 160 (d) None of of the above

(29) How much the total cost of pollution at this level is?

(a) 2600 (b) 3200 (c) 3600 (d) 400

(30) How much the company will pay for the community?

(a) 2600 (b) 3200 (c) 3600 (d) 400

(31) How much the company gain?

(a) 2600 (b) 3200 (c) 3600 (d) 400

(32) How much the net gain for the company is?

(a) 2600 (b) 3200 (c) 3600 (d) 400