**Quiz-1**

1. What is the meaning of economic efficiency? Show graphically and explain.
2. How can affect technological developments to the Production Possibility Frontier (PPF)? Discuss and show graphically.
3. What is the accumulative and non-accumulative pollutant? Discuss, show graphically and bring examples.
4. Production Possibility Frontier (PPF) and Community Indifference Curve (CIC). Show graphically and explain (assume that axis is“goods” and axis is a “environmental quality”)
5. Assume that the axis is a “goods” and axis is a “environmental quality”. Utilitiy function of society: and Production Possibility Frontier(PPF): (). Find the optimal solution of “goods” and “environmental quality”
6. Willingness to Pay (WTP) and demand curve. What is the different between them? Explain each one and show graphically (linear and non-linear WTP).
7. What happens to aggregate demand and supply curves when the price of the goods to rise (or fall) in the future? Draw graphs and explain each step.
8. Aylin’s demand for bottled water is given by the equation . Tural’s demand function is . Calculate Aylin and Tural’s marginal and total willingness to pay for four bottles of water, illustrate graphically and explain.
9. Gunel’s demand for chocolate is given by the equation . Alya’s demand function is . Compute the aggregate demand for chocolate, assuming Alya and Gunel are the only consumers. Derive the aggregate demand curve if there were twenty people with Alya’s demand curve and fifteen people like Gunel.
10. If MC curves are

A:

B:

1. Derive and graph the aggregate supply curve;
2. If a technological change shifts producers marginal cost curve four units, compute cost saving for A at
3. Let and. Draw graphs and find the net social value.
4. Negative externality of Production (an external cost). Show graphically and explain.
5. Negative externality of Consumption (an external cost). Show graphically and explain.
6. Positive externality of Production (an external benefit). Show graphically and explain.
7. Positive externality of Consumption (an external benefit). Show graphically and explain.
8. Linear and non-linear marginal abetement cost functions. Show graphically and explain.
9. Let and Find the net social cost at the initial emission level.
10. Let and Find the net social gain at the intersection point of marginal abatement costs and marginal damages.
11. Let and. Find the aggregate (total) abatement cost function(s) and draw graphs.
12. Why society wants to maximize net social value when choosing a target level of pollution. Discuss.
13. Are low interest rates () “good” or “bad” for the environment? Defend your argument.
14. Costs for Project

|  |
| --- |
| Cost (million $ in a year) |
| ***0*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** |
| 175 | 90 | 45 | 45 | 45 | 45 |

1. If you want to pay today’s costsafter 5 years (the interest rate is 5%) How many dollars you will pay?
2. If you want to pay second year costs, how many dollars you need today?
3. Costs and Benefits for Project

|  |  |
| --- | --- |
| Cost (million $ in a year) | Benefit (million $ in a year) |
| ***0*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** | ***0*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** |
| 175 | 90 | 45 | 45 | 45 | 45 | 10 | 120 | 120 | 140 | 150 | 150 |

1. Calculate the present value of your second year benefits.
2. Calculate the net benefit for 5 years and discuss your answer.
3. Assume that the following table is given. Calculate the sum of expected number of tanker accidents.

|  |  |  |  |
| --- | --- | --- | --- |
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1. A two-player pollution abatement game

|  |  |  |
| --- | --- | --- |
|  strategy for Ystrategy for X | *Pollute* | *Abate* |
| *Pollute* | 0, 0 | 4, -1 |
| *Abate* | -1, 4 | 2, 2 |

1. Find the Nash equilibrium
2. Why Nash equilibrium is a bad choice? Discuss.

**Quiz-2**

1. World Natural Gas Reserves. (describe the general situation)
2. World Natural Gas Production. (describe the general situation)
3. World Natural Gas Consumption. (describe the general situation)
4. World Natural Gas Trade and Prices. (describe the general situation)
5. Natural Gas: case of Azerbaijan. (describe the general situation)
6. World Crude Oil Reserves. (describe the general situation)
7. World Crude Oil Production and consumption. (describe the general situation)
8. World Crude Oil Trade and Prices. (describe the general situation)
9. Crude Oil: case of Azerbaijan. (describe the general situation)
10. A construction company is given a contract to build a pipeline from point A to point B which B is opposite side of water. The distance between A and C is 8 km, between C and B is 2 km. What is the cheapest construction cost to build the pipeline if it costs 1 million dollars per kilometer for a pipeline build on land and 2 million dollars for each kilometer in water?
11. Assume that, and marginal cost (MC) is constant at $2 per unit. We need to allocate supply of a depletable resource between two periods. If consumption of the first period is six units, find the present value of net benefit at period one and two also draw graphs.
12. Assume that, and marginal cost (MC) is constant at $2 per unit. We need to allocate supply of a depletable resource between two periods. If consumption of the first period is six units, find the present value of net benefit at period one and two also draw graphs.
13. Assume that, and. You are given. Find the present value of net benefits and compare them.
14. Weak, strong and environmental sustainability. Also explain the main differences between weak and strong sustainability.
15. Are efficient allocations fair? Explain it.
16. Assume that,, and . In which period the quantity of supply will be zero? Draw the quantity and the marginal cost graphs.
17. Assume that,, and . Also assume that the marginal cost of renewable resource is 7.546. Find the chock prices and draw the quantity and the marginal cost graphs.
18. Assume that,, and . In which period the quantity of supply will be zero? Draw the quantity and the marginal cost graphs.
19. Assume that,, and . Also assume that the marginal cost of renewable resource is 7.5. Find the chock prices and draw the quantity and the marginal cost graphs.
20. Assume that,, and . If the environmental cost shifts one unit, in which period the quantity of supply will be zero? Draw the quantity and the marginal cost graphs.
21. Assume that fishery has property right to use the river. Let chemical company pays 100$ per ton to the fishery. If and , find:
22. Total damage for fishery at point zero and
23. for chemical company at point zero and
24. Total payment to fishery
25. Net gain for fishery and chemical company
26. Assume that chemical company has property right to use the river. Let fishery pays 100$ per ton to the fishery. If and , find:
27. Total damage for fishery at point zero and
28. for chemical company at point zero and
29. Total payment to chemical company
30. Net gain for fishery and chemical company
31. Assume that fishery has property right to use the river. If and . Find the social efficient point and calculate:
32. Total damage for fishery at point zero and
33. for chemical company at point zero and
34. Total payment to fishery
35. Net gain for fishery and chemical company
36. Assume that chemical company has property right to use the river. If and. Find the social efficient point and calculate:
37. Total damage for fishery at point zero and
38. for chemical company at point zero and
39. Total payment to chemical company
40. Net gain for fishery and chemical company
41. How do green goods reduce pollution? Explain and show it graphically.

**The last 25 questions<NOXMLTAGINDOC> <DOCPAGE NUM="223"> <ART FILE="NEWWEB~1.EPS" W="72pt" H="52.293pt" XS="100%" YS="100%"/> </DOCPAGE> </NOXMLTAGINDOC>**

1. Type of standards. Explain and give an example
2. What kind of standard(s) would you recommend for Azerbaijan? Why? Explain.
3. Let and . Calculate the maximum value of net social gain.
4. Let and If standard is 80 tons, calculate the net social gain
5. Let, and emission standard is 40 tons.
6. Apply uniform standard and find the sum of TAC for both firm
7. Apply cost-effective individual standard and find the sum of TAC for both firm
8. Draw graphs and compare sum of TAC (part vs part )
9. Let (before technology), (after technology) and.
10. Find the cost saving at the initial equilibrium level
11. Find the cost saving at the new equilibrium level
12. In which case TAC is less?
13. Compare the tax approach with an emission standard.
14. Why wouldn’t the polluter (firm) simply disregard the tax, continue to pollute the way it has been, and just pass the tax on to consumers in the form of higher prices?
15. Let and. Government applies the tax rate of 20$ per ton. Calculate:
16. Net social benefit
17. Total abatement cost
18. Let and. Government applies the tax rate of 40$ per ton. Calculate total tax bill
19. Let and. Government applies the tax rate of 40$ per ton. Calculate total private cost.
20. Let and . Government applies the tax rate of 40$ per ton and ten tons of emissions free of tax. Calculate total tax bill.
21. Let and . Government applies the tax rate of 48$ per ton and ten tons of emissions free of tax. Calculate total private cost
22. Let and . Government applies the tax rate of 30$ per ton and ten tons of emissions free of tax. Calculate:
23. Net social benefit
24. Total abatement cost
25. Let and. If tax per kilogram of emission is 150$, and emission standard is 60 tons, calculate and compare:
26. (Emission Standard)
27. (Emission Tax)
28. Maximum sustainable yield of a fishery. Derive mathematically and explain economic meaning. Also, find the profit at this point. (Hint: assume that TR and )
29. Efficient sustainable yield of a fishery. Derive mathematically and explain economic meaning. Also, find the profit at this point. (Hint: assume that TR and )
30. Open access equilibrium level of a fishery. Derive mathematically and explain economic meaning. Also, find the profit at this point. (Hint: assume that TR and )
31. Assume that the relationship between the growth of a fish population and the population size can be expressed as , where is the growth in kilograms and is the size of the population. If fish’s price is 10$ for one kilogram and the total cost is , find the maximum sustainable yield and profit at this point
32. Assume that the relationship between the growth of a fish population and the population size can be expressed as , where is the growth in kilograms and is the size of the population. If fish’s price is 10$ for one kilogram and the total cost is , find the efficient sustainable yield and profit at this point
33. Assume that the relationship between the growth of a fish population and the population size can be expressed as , where is the growth in kilograms and is the size of the population. If fish’s price is 10$ for one kilogram and the average cost is five dollars, find the open access equilibrium level and profit at this point
34. What is the different between an open-access fishery and a common property fishery?
35. Stable and unstable points of fishery. Draw graph and explain the meaning of each point.
36. Let growth function of fish population is given by function of. If fish stocks are 3 tons and catch level of fish stocks are 10 tons (after growth), find the maximum fish stocks after years.
37. Assume that chemical company has property right to use the river. Let and. How can maximize fishery its net gain? Find the optimal payment to chemical company for one ton of emission.