Exercise 1: Allocation Mechanisms

a) What is the key economic problem that people face both in isolation and in a social context?
b) Briefly explain the characteristics of the market system as an allocation mechanism. What alternative allocation mechanisms are available and what are the criteria that these alternatives apply to solve the problem discussed in (a)?

Exercise 2: General aspects of policy interventions

a) A policymaker in Wonderland suggests to lower public transportation charges. He argues that poor people cannot afford the current charges and that everyone should have the possibility to use public transportation. Please explain why this policymaker violates the extended Tinbergen rule and what alternative measures might be more appropriate.
b) What is meant by the so-called "Cobra effect"? Please give an example (other than fighting cobra plagues) to illustrate your answer.
c) Please use a two-goods-diagram to illustrate the concept of Pareto efficiency. Can this criterion be used to decide whether the government should increase education spending and reduce expenditure for the military forces?

Exercise 3: Price controls and taxes

The demand (x_D) and supply (x_S) curves for the beer market are as follows (p =price):

$x_D = 1300 - 4p$

$x_S = 100 + 2p$

a) Please calculate the market clearing price, the associated quantity of beer produced and consumed as well as the social welfare for the market equilibrium. Illustrate your results graphically in a market diagram.
b) Some social pressure groups argue that beer is too expansive for poor people. Therefore, they propose a general price ceiling of p_{max} =150. How would this intervention affect quantities and social welfare?
c) By contrast, the beer industry lobbies for a minimum beer price of p_{min} = 250 in order to protect smaller breweries that would otherwise be competed out of the market. What would be the effect on beer production and social welfare? Who wins, who loses?
d) Politician S says that beer consumption should be taxed because alcoholic beverages are bad for peoples' health. S proposes a tax of t=150 on each unit of beer. To what extent does the welfare effect of this proposal differ from the one you got in case (c)? Does it make a difference whether beer production or beer consumption is taxed?

Exercise 4: Efficiency of the market system I

a) How does the market mechanism coordinate individual decision making in a society? Please elaborate on the concept of static efficiency.
b) Does Pareto efficiency mean that there is only one social optimum that an economy can gravitate towards?
c) Is there a conflict between static and dynamic efficiency? If so, please give an example, if not, please say why.

Exercise 5: Efficiency of the market system II

  a) Why is the contract curve in a 2-goods/2-persons Edgeworth box upward sloped? How does this relate to the Pareto principle?
  b) Why is the production possibility curve in a 2-goods-diagram downward sloped? How does this relate to the Pareto principle?

Two persons (A and B) are currently consuming two goods (X and Y). The marginal rate of substitution of person A is $MRS_A = (\Delta X/\Delta Y)_A = -3$ while the marginal rate of substitution of person B is $MRS_B = (\Delta X/\Delta Y)_B = -2$.

  c) Show that there is scope for mutually beneficial exchange among the two persons A and B.
  d) How does the market mechanism make sure that a situation of diverging marginal rates of substitution even in large anonymous consumer groups does not persist?

Exercise 5: Technological external effects

The government wants to improve the air quality in a city region as inhabitants of this area are complaining about frequent smog alarms. Scientists say that the smog is caused by heavy emissions of pollutant P and that a reduction of P-emissions by 40 percent (compared to the current quantity of 50 thousand tons of P emissions per year) would eliminate the smog problem. Two policy options are under debate: Option 1 provides that each and every polluter must reduce the quantity of emissions by 40 percent while option 2 provides for introducing a tax on P-emissions.

  a) Why is a total ban on P-emissions most likely not a socially optimal policy option? Please elaborate.
  b) Please demonstrate that both policy options are in principle effective for reaching the envisaged policy goal. Which one is more efficient?
  c) Could you think of a third policy option that might be preferable to the favorite of question (b)? Please explain.

Exercise 6: Public goods

Please classify the following goods according to the rivalry-/excludability-matrix and check whether the following policy settings are in line with the theory of collective goods. If you come to a negative result, please make a suggestion of how to improve the situation.

  a) A municipality runs public swimming pools to keep ticket prices low for everybody.
  b) The government sponsors a "free" TV station by collection TV contributions from every home owner.
  c) The regional government finances new flood protection facilities by raising compulsory charges for every developed property in the protected area.