

I. Part (Wilts)

1. Task

Explain the differences between efficiency and consistency approaches for sustainable resource management. How is this reflected in the European Commission's Roadmap for a Resource Efficient Europe and the Circular Economy Action Plan? (10 P.)

2. Task

How does the selection of policy instruments differ between efficiency and consistency approaches? Which information requirements have to be fulfilled for successful implementations? (10 P.)

3. Task

Taking the example of either (!) a) waste incineration taxes; b) resource extraction taxes, c) extended producer responsibility or d) deposit schemes; explain advantages and disadvantages of such market based instruments for resource efficiency. (10 P.)

II. Part (Erdem)

4. Task

Please answer the following questions.

- 1.) Please describe possible economic consequences of an oil price shock (4 P.)
- 2.) Please describe the trade-offs between energy policy objectives and support your answer with examples. (6 P.)
- 3.) Please explain the effects of renewable resources on the price setting in a merit-order based electricity market (6 P.)
- 4.) Which segment of German electricity and gas markets is regulated? Please explain the reasoning and objectives. (4 P.)

5. Task

Please explain 3 of 4 concepts you choose: (4 P. each)

- 1.) Carbon lock-in effect
- 2.) Hotelling rule
- 3.) Effects of a back-stop technology on the price of exhaustible energy resources

III. Part (Udalov)

1. Task:

Define an externality. What kind of different external effects do you know? What are the implications of negative externalities and what are the theoretical internalization instruments (6 P.)

2. Task

- a) Name 3 standard-orientated environmental instruments for internalizing negative externalities. Explain in a detailed way which instruments are cost efficient and which not. (6 P.)
- b) Explain how do feed-in-tariff and quota obligation function. Discuss at which development stages of renewable energy technology is it better to use feed-in-tariff and at which quota obligation. (8 P.)

3. Task

The market for a product x is perfect competitive. The inverse demand function is $MPB(x) = 30 - x/40$. The aggregated supply function is $MPC(x) = x/40$. The marginal external costs are represented by $MEC(x) = x/80$.

- a. Please calculate the uncorrected market equilibrium.
- b. Determine the social optimum considering the negative externality.
- c. Calculate the optimal amount of Pigou tax, which is necessary to internalize the externality. What is the corresponding Pigou tax revenue?

(10 P.)