Taloustieteiden tiedekunta

Tentin päivämäärä / Date of exam: 23.4.2015
Opintojakson koodi, nimi ja tentin numero / The code and the name of the course and number of the exam: **721334S Environmental Economics**
Tentaattori(t)/ Examiner(s): Artti Juutinen
Sallitut apuvälineet / The devices allowed in the exam: ☐ Laskin (ei graafinen/ohjelmoitava)/Calculator (not graphic, programmable) ☐ Sanakirja/Dictionary ☐ Muu materiaali, tarkennettu alla/Other material, specified below
Tenttiin vastaaminen / Please answer the questions ☐ X suomeksi/ in Finnish ☐ X englanniksi/ in English
Kysymyspaperi on palautettava / Paper with exam questions must be returned: ☐ Kyllä/Yes ☐ X Ei/No

1. Exam

Answer all the questions 1-5.

1. Suppose that the mining company owns a fixed stock of ore. The size of stock is 15 tons. The company operates only two periods. Denote ore extraction at period t by x_t. The market price of ore (per ton extracted) is 10 euros. Accordingly, the total revenues are $R_t = 10x_t$ The total costs of extraction are $C_t = \frac{1}{2}x_t^2$. The rate of interest at which rents are discounted is 10 percent. Describe the theory of the mine and derive the optimal extraction path of the mine's output for the two periods.

2. Describe how taxes on fishery can be used to solve the open access problem in fishery. (Hint: use graphs)

3. Explain what is a Pigovian fee. By using graphs illustrate and explaine what is the optimal Pigovian fee on pollutant emissions with two polutters and one victim of pollution.

4. Describe the main characteristics (including implementation) of a travel cost method.

5. Explain what concepts can be used to measure the welfare effects of environmental improvement (clarify your answer graphically).