

Name\_\_\_\_\_

Vorname\_\_\_\_\_

Matrikel-Nr.:\_\_\_\_\_

Studiengang:\_\_\_\_\_

☐ Regulärer Versuch

☐ 1. Whlg.

☐ 2. Whlg.

Universität Rostock  
Wirtschafts- und Sozialwissenschaftliche Fakultät  
Lehrstuhl für VWL – Außenwirtschaft –

**Klausur**  
**Introduction to Environmental and Resource Economics**  
**(BSc Wirtschaftswissenschaften)**

**SoSe 2021, 21.7.2021**

- Beantworten Sie **zwei der drei** gestellten! Unterschreiben Sie die Klausur auf der letzten Seite. Alle Aufgaben sind gleich gewichtet.
- Erlaubte Hilfsmittel: keine.
- *Please answer **two out of three** questions! All questions are equally weighted.*
- *Additional materials allowed: none.*

Bearbeitungszeit: 90 Minuten

*Time limit: 90 minutes*

*Two (and only two) out of three questions! If you adopt the notation used in the lectures, you do not have to explain the symbols you use.*

### **1 (Evaluation)**

What is meant by the use value, the option value, and the existence value of an environmental resource? Describe the hedonic pricing model to determine the use value and the contingent valuation method to determine the existence value. What are their strengths and weaknesses?

### **2 (Resource Dynamics)**

Use the **predator-prey model** to describe the interaction of an ecosystem and its users! Let  $Q$  be the quality of the ecosystem, growing exponentially without human intervention. Let  $H$  be the level of human intervention, shrinking exponentially if the ecosystem is not functioning, i.e. if  $Q=0$ . Use the interaction effects known from the predator-prey model and derive the equilibrium conditions. Then draw the phase diagram and explain the intuition behind the cyclical resource use dynamics!

### **3 (Transfrontier Pollution)**

There are two countries, home and foreign, that pollute each other. Write down a simple welfare function of the one of the two countries and derive the optimality condition. Then draw the reaction curve diagram, explain what the reaction curves mean and why they are negatively sloped. Then use the iso-welfare curves to show that the Nash equilibrium is not Pareto optimal and finally show how the Pareto optima can be derived. Explain what you are doing!

***You can just use the iso-welfare curves. You don't have to explain their shape.***