



**EASTERN UNIVERSITY, SRI LANKA**

**FINAL YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2014**

**AEC: 4104 RESOURCE AND ENVIRONMENTAL ECONOMICS**

**Answer All questions**

**Time: 2 Hours**

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1. a. Briefly illustrate the Negative Production Externality.
  
  - b. Suppose that a wood pulp mill is situated on a bank of the River A. The private marginal cost (MC) of producing wood pulp (in Rs per ton) is given by the function  $MC = 1000 + 0.5Y$ . Where Y is tons of wood pulp produced. In addition to this private marginal cost, an external cost is incurred. Each ton of wood pulp produces pollutant flows into the river which cause damage valued at Rs.1000 which is an external cost, as it is borne by the wider community but not by the polluting firm itself. The marginal benefit (MB) to society of each ton of produced pulp is given by  $MB = 3000 - 0.5Y$ .
  
  - i. Using a diagram illustrate the relationships among Marginal Cost (MC), Marginal Benefit (MB), and Marginal Social Cost (MSC) functions.
  
  - ii. Find the profit-maximising output of wood pulp by the pulp mill.
  
  - iii. Find the wood pulp output which maximises Social Net Benefits.
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2. a. What are the different types of Values in Environmental Valuation and give brief explanation on each of it.
  
  - b. Briefly describe the different types of Stated Preference methods using appropriate examples.

3. a. Graphically illustrate the "Schaefer Model" of fisheries.
- b. Discuss the term "Static Efficient Sustainable Yield" in fisheries.
- c. The biological relationship between the growth of a given fish population and the population size can be expressed as  $g = 360x - 4.5x^2$ , where  $g$  is the net addition to the stock in number of fish and  $x$  is the size of the stock in thousands of fish. Find all the biological equilibria of this fishery, and state which of these are stable and which are in unstable equilibrium.
4. Write **Short Notes** on the following.
- a. Property Rights
- b. Adaptation and Mitigation strategies to Climate change
- c. Biological dimension of a forest tree growth.
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