EASTERN UNIVERSITY, SRI LANKA

FINAL YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2012

AEC: 4104 RESOURCE AND ENVIRONMENTAL ECONOMICS

Answer All questions

Time: 2 Hours

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1. a. Graphically illustrate the "Schaefer Model" of fisheries.

   b. Discuss with suitable diagrams how an efficient level of effort in fishing can be achieved.

   c. In the typical economic model of an efficient fishery, would a fall in the price of fish generally result in a larger or a smaller sustainable harvest? Why?

2. a. What are Resources and how will you differentiate it from a Non- resource?

   b. Suppose the government is trying to decide how many kilometers of a scenic river it should preserve. There are 100 people in the community, each of whom has an identical inverse demand function given by $P = 10 - q$, where q is the number of kilometers preserved and P is the per-km price he or she is willing to pay for q kilometers of preserved river.

      i. If the marginal cost of preservation is Rs. 500 per km, how many kilometers would be preserved in an efficient allocation?

      ii. Calculate the Consumer Surplus.

3. a. Explain the concept of "Economically optimal level of pollution".

   b. Briefly describe the Coase Theorem.

   c. Two firms can control emissions at the following marginal costs: MC_1= Rs. 200q_1 MC_2= Rs. 100q_2, where q_1 and q_2 are, respectively, the amount of emission reduced by the first and second firms. Assume that with no control at all, eac firm would be emitting 20 units of emissions or a total of 40 units for both firms Calculate the cost-effective allocation of control if a total reduction of 21 units o emissions is necessary.

4. a. Explain the different ways to achieve an efficient level of production in th presence of externalities

   b. Identify whether each of the following resource categories is a public good, common pool resource or neither and defend your answer.

   i. A number of whales in the ocean to whale hunters.

   ii. A lighthouse in the sea to the public.

   iii. Water from a town well for the residents.

   iv. Bottled water.