EASTERN UNIVERSITY, SRI LANKA

SECOND YEAR SECOND SEMESTER EXAMINATION IN AGRICULTURE- 2017

EC: 2201 NATURAL RESOURCE ECONOMICS

Answer All questions

Time: 2 Hours

1. a. What do you understand by the term "Externalities"?

   b. Briefly describe two different types of externalities.

   c. What type of externality is present in each of the following examples? Comment whether the Marginal Social Benefit of the activity is greater than or equal to the Marginal Private Benefit to the individual and the Marginal Social Cost of the activity is greater than or equal to the Marginal Private Cost to the individual.

   i. Mr. X plants lots of colorful flowering plants in his front yard.

   ii. Your next-door neighbor likes to build bonfires in his backyard, and sparks often drift onto your house.

   iii. Mr. P, who lives next to an apple orchard, decides to keep bees to produce honey.

   iv. Ms. R buys a large Vehicle that consumes a lot of gasoline.

   (25 Marks)

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

   b. Discuss the term "Static Efficient Sustainable Yield" in fisheries.

   (20 Marks)

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3.a. Graphically explain the biological dimension of a forest tree growth.

b. 2.b. You are asked to determine the optimal harvest decision (rotation rule) for growing wood on a land. The harvesting cost is Rs. 4000 per acre. The land value after harvesting is Rs.50000 per acre. The market price of wood is predicted to stay constant at Rs.20 per cubic foot for the next 50 years. The table below gives the estimated volume of the wood in the forest in various years.

      i.   Calculate the Annual incremental growth of a forest using the data provided.

      ii.   Estimate the rotation time that will give the maximum sustained wood yield.

Age (Years)	Volume (Cubic feet of wood/acre)
1	25
10	295
15	480
16	520
17	561
18	603
19	646
20	690
30	1189
31	1247
32	1306
33	1366
34	1427
35	1488
36	1548
37	1607
38	1663

39	1716
40	1766
41	1813
42	1857
43	1897
44	1934
45	1968
50	2094

(25 Marks)

4. Write **SHORT NOTES** on the following

   a. Efficient allocation of surface water

   b. Efficient level of pollution

   c. Property Rights

(30 Marks)