THE OPEN UNIVERSITY OF SRI LANKA

Post Graduate Diploma in Environmental Science 2007

NEP 2202 – Biodiversity Conservation & Management

Final Examination 2007

Duration – 3 hours

Date 15th November, 2007 Time 9.30 a.m to 12.30p.m

Answer FOUR (4) questions only

Question 1

According a newsletter article, "Molluscs are the most diverse group of fauna, with an estimated 135,000 species in the world. Bivalves, gastropods and cephalopods are heavily exploited by humans, with significant monetary benefits. Uncontrolled exploitation has led to localised extinctions in some countries. Many species are exported, as decorative art and in the aquarium trade."

i). Give one example each of species in the three groups of mollusc in the above passage and classify them to Class level.

ii). What groups of animals termed "cephalopods" are found commonly in Sri Lankan fish markets?

iii). What is the global Convention that regulates exploitation of organisms for trade? It is also stated in the above mentioned article that the 'queen conch,' in demand for its meat is listed in Appendix II of this Convention. What does this mean?

iv). Discuss briefly the relevance of *in-situ* and *ex-situ* conservation for conservation of the queen conch *Strombus gigas*.

v). To which Class of mollusc does *Strombus gigas* belong to? What is the generic name and specific epithet of this organism?

vi). In which of the following environments do molluscs occur?: terrestrial, freshwater, marine, paddy fields, trees.

Question 2:

(i) Define and discuss the difference between direct and indirect values of biodiversity using the Sinharaja Forest and its resources as an example. Confine your answer to a maximum of **two** paragraphs.

(ii) Explain in one paragraph the bequest value of biodiversity in this example.

(iii) Define consumptive and non-consumptive uses of biodiversity in the Sinharaja forest, briefly discuss the difference between these two types of biodiversity uses, and give one clear example of consumptive and non-consumptive use of biodiversity (with economic benefits) from the Sinharaja Forest.

(iv) Describe the main differences in the vegetation you would expect to find in a similar sized area of the Sinharaja rainforest and the Sahara desert.

Question 3:

This is from a newsletter of an International Environmental Organisation.

"Tourism is one of the world's fastest growing industries. Its growth can mean more revenue and employment but also major environmental and social impacts if not managed properly. Tourism can have a major impact on the lives and cultures of "host' populations. The seting, development and management of tourist resorts and tourism related infrastructure can have serious and sometimes irreversible impacts on the environment."

i). Discuss the above passage fully in terms of the relevance of ecotourism to reduce the negative impacts of tourism on the environment mentioned here. In doing so, define ecotourism and list the three important aspects of ecotourism which separates it from other types of nature tourism.

ii) A hotel developer has requested permission from you to build a luxury hotel with 100 air-conditioned rooms and a large swimming pool near a marine protected area with coral reefs. He says he is promoting ecotourism.

Discuss whether this can be classified as ecotourim from the facts given here.

Question 4

i). State the main points to support whether *in-situ* and *ex-situ* conservation measures are equally suited for saving the leopard and an endangered ornamental fish species (*Puntius pathirana*) from extinction.

ii). What are the main laws in Sri Lanka that govern conservation of indigenous plants and animals in their natural habitats, and what organisation/s are directly responsible for implementing them?

iii). Define and explain briefly the terms 'habitat corridors' and 'linkages' in terms of biodiversity conservation.

iv). Explain briefly as to how habitat corridors and linkages between fragmented protected areas can help prevent local extinction of the leopard.

Question 5

A newspaper article states that "... the strawberry guava, a native of Brazil, when introduced to other countries has caused problems. Similarly, the North American grey squirrel is slowly eliminating the native European red squirrel." Your neighbor who is not a scientist shows this article to you and wants you to explain what these sentences mean.

i). What term is used to refer to species causing problems such as the two mentioned above?

ii). Explain in simple language the problem referred to in the article with respect to biodiversity conservation.

iii). In what manner can the North American grey squirrel, a herbivore, eliminate the native European red squirrel?

iv). If the strawberry guava starts to proliferate in a national park, what type of management interventions do you think would be required to overcome it?

v). Give two examples of similar situation as the strawberry guava in a Sri Lankan National Park.

Question 6

Assume that you are working for the Department of Wildlife Conservation. You have just started a major project to conserve the elephant in Sri Lanka and have set up a project office. Your staff has to respond to calls from villagers and interested parties who will be contacting the project with their problems and concerns.

i). What are the two broad groups of stakeholders (not individual stakeholders) for whom you should plan your communication to make the project a success?

ii). List the 10 major steps to be considered when preparing a communication plan to conserve elephants in Sri Lanka.

iii). Your superior officer wants to prepare a film to be shown on TV about elephants to address the human-elephant problem in a remote poorly developed village. Discuss its effectiveness in one paragraph as a communication "means" for the main target group affected by this problem.

iv). Describe the advantages and disadvantages of instrumental and interactive communication. State which method will be most effective for the problem at hand and substantiate your answer.