PART A

QUESTION 1

1.1 List four (04) basic features of a typical nutrient cycle.

(i) ----------

(ii) ----------

(iii) ----------

(iv) ----------

1.2 Explain the role played by the nutrient cycles for the existence of organisms.

1.3 State two (02) main reservoirs of the elements given below.

Carbon ----------

Oxygen ----------

Sulphur ----------

Nitrogen ----------

1.4 State two (02) forms of the following elements that are present in living organisms.

Carbon ----------

Oxygen ----------

Sulphur ----------

Nitrogen ----------

1.5 Briefly explain the processes indicated below.

Assimilation of carbon ----------

Ammonification ----------

Nitrification ----------

1.6 State the organism / s that are involved in the following processes.

Decomposition ----------

Biological fixation of nitrogen ----------
(Give only three organisms)

Nitrification ----------

De-nitrification ----------

1.7 a) Indicate the phases of the sulphur cycle.

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b) State the main difference between the sulphur and phosphorus cycles.

1.8 Describe three (03) methods by which sulphur-containing organic matter is converted to inorganic sulphur compounds through the activity of microbes.

(i) ----------

(ii)----------

(iii)----------

1.9 How does "acid rain" form ?

1.10 State two (02) harmful effects of sulphur-dioxide on terrestrial organisms.

(i) ----------

(ii)----------

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THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME - LEVEL 4
FINAL EXAMINATION 2007 / 2008
COURSE TITLE : FUNDERMENTALS OF ECOLOGY - PAPER 2
COURSE CODE : ZOU 2265 / ZOI 4265
DURATION : 3 HOURS

DATE : 2ND JULY 2008 TIME : 1.30 PM - 4.30 PM

PART B

ANSWER ANY FOUR (04) QUESTIONS.

2. a) Explain the "Hutchinson's species concept" of niche.
   b) Describe how you construct a niche of a hypothetical species having only three niche dimensions in its niche space.
   c) Explain the forms of niche overlap that occur among species in the utilization of resources.

3. Explain how a forest community re-establishes after a severe fire with special reference to the main stages and mechanisms.

4. Describe how the characteristic features of Muthurajawella marsh-Negombo lagoon wetland ecosystem complex contribute to its high productivity and biological diversity.

5. Write short notes on ***any three*** of the following.
   a) Logistic growth of populations.
   b) Allopathic speciation.
   c) Functional response in prey-predator interaction.
   d) Tolerance curves.

6. a) Describe the factors governing the distribution of biomes in the world.
   b) Describe the adaptations of plants and animals of the major biome found in Sri Lanka.

7. Explain the outcomes of inter-specific competition between two species (N_1 and N_2) that share a common resource.

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