00374

THE OPEN UNIVERSITY OF SRI LANKA

B. Sc. DEGREE PROGRAMME - LEVEL 4

FINAL EXAMINATION– 2011/2012

COURSE TITLE: FUNDAMENTALS OF ECOLOGY

COURSE CODE – ZOU 2265/ZLU 2281

DURATION – 3 HOURS

INDEX NUMBER .....

DATE: 19.11.2012 TIME -9.30AM-12.30 PM

QUESTION PAPER CONSISTS OF TWO PARTS, PART "A" AND PART "B".

ANSWER QUESTION 1 FROM PART "A" AND ANY FOUR QUESTIONS FROM PART "B".

PLEASE NOTE THAT QUESTION 1 IS COMPULSORY AND THE ANSWERS SHOULD BE WRITTTEN IN THE SPACE PROVIDED.

PART "A"

QUESTION 1

1.1

.a) Define the term population.

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b) State the parameters that affect population density.

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c) What is meant by the "age structure of a population"?

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d) Draw age pyramids of human populations to demonstrate:

i) increasing growth ii) decreasing growth iii) zero growth

e) Give your opinion about the growth of the populations (i to iii) given below. Cons particular human population in which almost all the parents are having children bu varying numbers.

Population i - One child .....

Population ii - Two children .....

Population iii - Three children.....

f) Explain your results for the above 1.1 e) briefly.

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1.2.

a) Giving suitable examples list the types of growth curves you have studied.

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b) With sufficient resources a population showed a rapid growth rate. However, resources became limited later, and the growth rate changed from the beginning.

Which type of growth curve would you expect to have for this population? Draw the growth curve with the relevant equation and explain it.

c) Name the type of interaction that occurs when organisms of different species or populations live near one another and struggle to obtain the same limited resources.

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d) If there are two species involved what would be the out come of this interaction?

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e) Write the Lotka and Volterra **mathematical equation** for the growth of the above populations.

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f) Explain the above out comes of 1.2d) with suitable illustrations.

PART "B"

ANSWER ANY FOUR (04)) QUESTIONS

2. Discuss ecological pyramids in detail.

3. Write an essay on "Shelford's Law of tolerance"

4. Describe the phosphorous cycle and explain briefly the major human influence on this cycle.

5. You have been asked to do an ecological survey of an ecosystem. Explain the survey process from planning stage to report writing.

6. a) What is a Biome?
   b) List the main factors which determine the distribution of biomes on the earth.
   c) Mention the major life zones (biomes) in the world along with their relevant locality/distribution.
   d) Give a brief description on major forest types found in "sunny and rainy tropical zone" and list comparable forest types found in Sri Lanka.

7. Write short notes on **any three** of the following.
   a) Fundamental niche and realized niche.
   b) Continental drift.
   c) Density dependant population regulation.
   d) Climax stage of succession.