



THE OPEN UNIVERSITY OF SRI LANKA
B.SC. DEGREE PROGRAMME-LEVEL 05-2007/2008
BTU3101/BTE5101- ENVIRONMENTAL AND APPLIED MICROBIOLOGY
ASSESSMENT TEST I (OPEN BOOK TEST)

Duration: one hour



Reg. No:

Answer all questions on this paper itself.

1. a. With the help of your knowledge on 'kinds of microorganisms in soil', list features by which you can distinguish bacteria, algae and fungi from each other based on their cell components, methods of reproduction and nutrition.

	Bacteria	Algae	Fungi
Cell components

Method of reproduction

Nutrition

- b. Give one example for each of the following interactions in soil.

- microorganism and microorganism-.....
- microorganism and plants -
- microorganism and soil animals -

- c. Distinguish between beneficial and antagonistic interactions in soil with one example.

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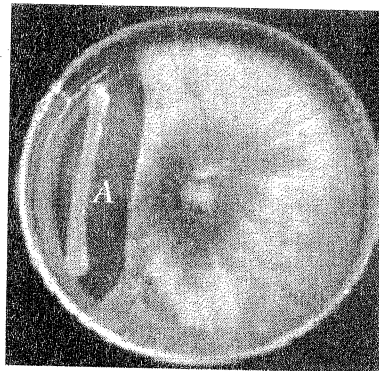
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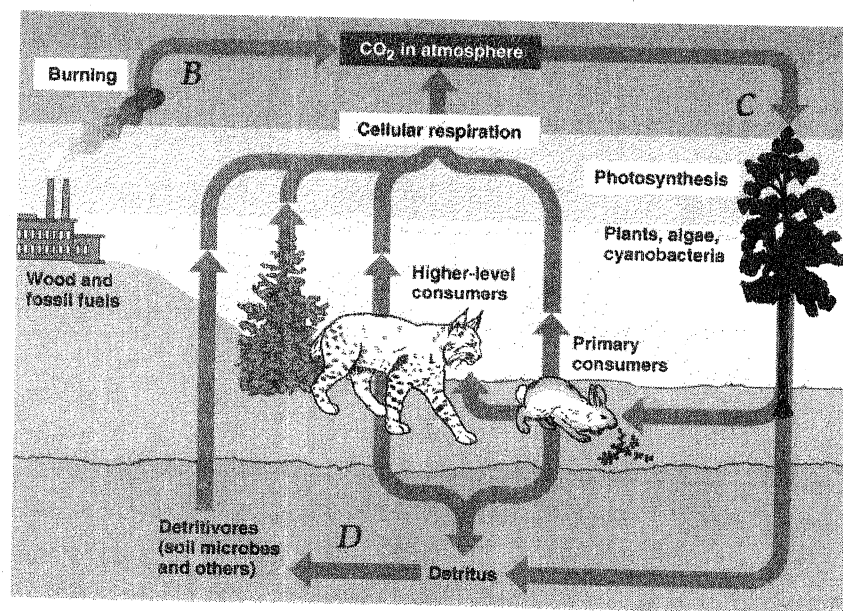
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- d. Given below is a plate obtained after inoculating two soil microorganisms (*Bacillus* sp. and *Botrytis squamosa*) to study the effect of antibiosis in a laboratory. How do you explain the formation of clear zone (A) in the plate below?



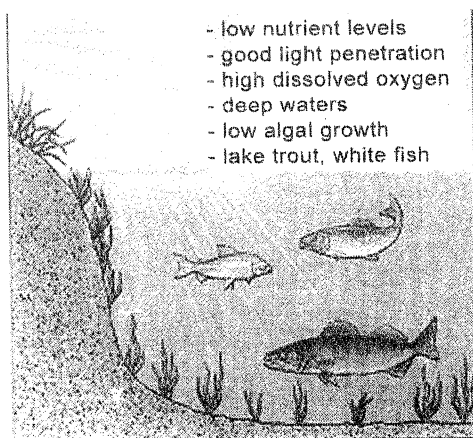
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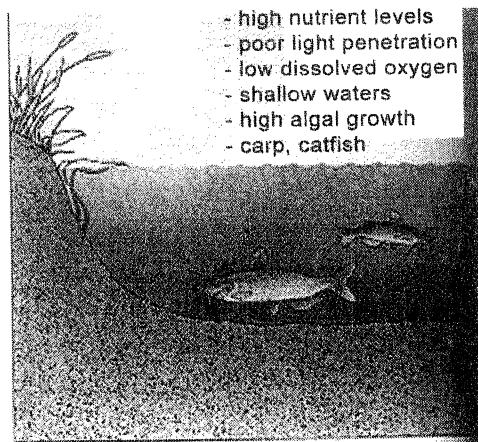
The above diagram shows you how Carbon is cycling in nature. This cycle has been considered the most affected cycle due to human influences. Indicate below the type of influence and the consequences (effects) with respect to the steps **B**, **C**, and **D** in the Carbon Cycle (Indicate at least two possible influences and relevant effects) in the space below.

03. a. What is the significance of Biological Oxygen Demand (BOD) in water pollution?

b. Some characteristics related to the two lakes are given below. Discuss the differences with reasons.



(a) Oligotrophic lake



(b) Eutrophic lake

c. What are the basic steps in treating water for drinking?

d. Discuss the function of each of the steps you mentioned above.

4. Explain the following statements.

a. High temperature is the safest and the most reliable method of food preservation.

b. Meat is an excellent growth medium for microorganisms.

c. *Staphylococcus* food poisoning is not considered as a bacterial infection.

d. Ropiness is recognized by an unpleasant odour together with discolouration and a slimy sticky consistence that made to form bread strings.

- e. The most common methods of food preservation depend not only on the killing of microorganisms but also on the delay of initiating and inhibiting of growth once it has begun.

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