



THE OPEN UNIVERSITY OF SRI LANKA
B.Sc DEGREE PROGRAMME - LEVEL 05 - 2006/2007
BOTANY - BTU 3101/BTE 5101 - ENVIRONMENTAL AND APPLIED
MICROBIOLOGY
ASSESSMENT TEST I (OPEN BOOK TEST)

Duration - One hour

Reg.No. -

Answer all questions on this paper itself.

1. a. Define the term "Mutualism".

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b. How does symbiotic nitrogen fixation differ from nitrogen fixation by *Azotobacter*?

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c. Give five(5) practices you may use when sampling the soil for microbiological analysis to increase the reliability of your results.

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d. List down three (03) methods that can be used to assess the metabolic activity of microorganisms in soil.

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2. a. Distinguish between 'Potable water' and 'Wastewater'.

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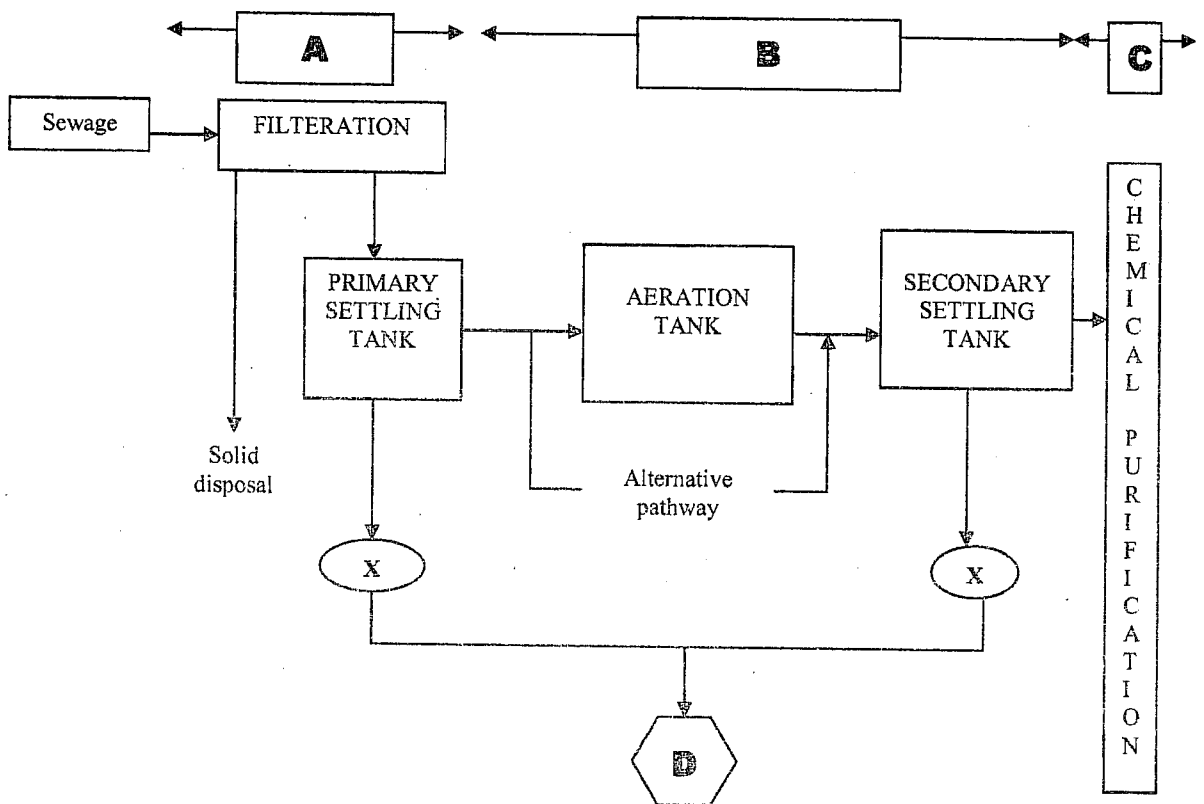
b. Almost all municipals are obtained water for distribution for drinking from contaminated surface water sources and therefore purification is essential. Outline five (05) major steps(in order) carried out in a municipal water purification plant and the purpose of each step.

Step	Purpose/objective
1.
2.
3.
4.
5.

c. Why do we treat sewage?

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d. The following schematic diagram shows different processes taken place in a sewage treatment plant.



i) A, B and C are three broad terms used to explain the three major steps in the treatment process. Name A, B and C .

- A
- B
- C

ii) Give the main objectives of each of the process.

- A
- B
- C

iii) What are the two aerobic biological treatment processes that can be used in B ?

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iv) What is X ?

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v) Describe briefly the process occur in D.

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3. A patient was having a sudden onset of abdominal pain accompanied by a watery diarrhea and the doctor let him know that he is suffering from a food infection probably due to a meat curry he had for dinner on the previous night.

a. What can be the food infection that the patient is suffering from?

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b. Give a brief account on the nature of the causative organism.

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c. How do you think the organism enter and survive in the meat curry?

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d. Meat is an excellent growth medium for microorganisms. Why?

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d. What are the preventive measures that you can take in order to prevent the above food infection?

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e. Name two other bacterial food infections that are commonly encountered and their causative organisms.

Food infection	Causative organism
1.
2.

f. How do you control microorganisms in air?

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