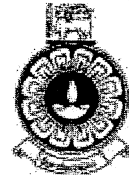
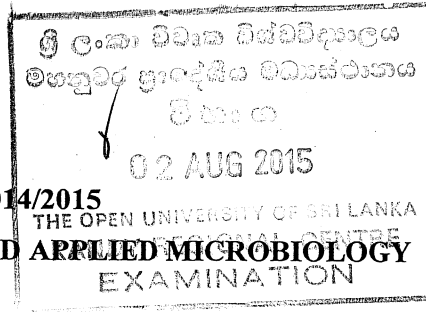


THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME – LEVEL 5 -2014/2015
BOU 3100/BOE5100- ENVIRONMENTAL AND APPLIED MICROBIOLOGY
ASSESSMENT TEST 1 (OPEN BOOK TEST)



Duration – One (01) hour

Reg. No. -

Date – 02nd August 2015

Time – 2.30 – 3.30 pm

Answer all questions on this paper itself. This paper consists of five (05) questions and five (05) pages.

01. Fill in the blanks with suitable word/words.
 - 1.1 The most numerous microorganisms in soil are
 - 1.2 The fixation of molecular nitrogen occurs in containing the pigment
 - 1.3 Fungi are abundant near the soil surface where is readily available.
 - 1.4 is a fungal pigment resistant to heat and desiccation.
 - 1.5 Pipes can be corroded by the acid produced by the genus *Thiobacillus* from the oxidation of
 - 1.6 The group of microorganisms that can grow optimally under elevated hydrostatic pressure are called
 - 1.7 Wood is mainly decayed by fungi belonging to the groups of , and
 - 1.8 is the causative organism of small pox in human beings.
 - 1.9 In bacteriological analysis of water, the standard plate count is designed to determine the population of bacteria in water.
 - 1.10 The enzyme in *E. coli* cleaves the MUG substrate producing a fluorescent end product called

02.

(a). What is meant by 'Rhizosphere effect'?

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(b). Soil algae are found mostly either on soil surface or just below the surface. Why?

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.....

(c). Explain the terms mutualism, parasitism, amensalism and predation. **Give one example** for each association which may occur among/between the organisms in soil.

(i). Mutualism

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.....

Example

(ii). Parasitism

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.....
.....

Example

(iii). Amensalism

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.....

Example

(iv). Predation

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.....
.....

Example

03. Differentiate between the following.

(a). Soil inhabiting pathogens

Root inhabiting pathogens

1.
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2.
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3.
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(a). Anaerobic sludge digestion

Aerobic sludge digestion

1.
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2.
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3.
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04.

(a). Distinguish between 'potable water' and 'wastewater'.

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- (b). Almost all municipals obtain water from contaminated surface water bodies for purification and distribution among consumers as drinking water. Outline the major steps (in order) in the purification process of municipal water supplies giving the purpose of each step.

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

- (c). Why do we treat wastewater?

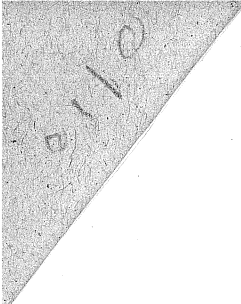
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05.

- (a). Mention briefly the antimicrobial action of the following methods of food preservation.

- (i). Pickling

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(ii). Dehydration

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(iii). Refrigeration

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(b). Give **one (01) advantage** and **one (01) disadvantage** of using irradiation in food preservation.

Advantage -
.....

Disadvantage -
.....

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