

THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. / B. Ed. DEGREE PROGRAMME - LEVEL 04
BTU 2104 / BTE 4104 / BTI 4104 – PRINCIPLES OF MICROBIOLOGY
OPEN BOOK TEST - 2009/2010



DURATION – ONE (01) HOUR

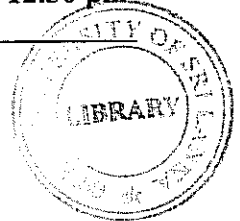
Reg. No.

Date: 21.09.2009

Time: 11.30 am – 12.30 pm

Answer All Questions.

Questions should be answered on the question paper itself.



01. Write the term explained by each of the following phrases.

- i. Technique of handling material as to maintain their sterility -
- ii. A substance produced by microorganisms that can inhibit the growth of some other microorganisms -
- iii. The general mode of nutrition of Protozoa -
- iv. Mutual association of algae with fungi -
- v. A group of gram positive bacteria that has an ability of producing mycelium -
- vi. A group of oxygenic phototrophic bacteria -
- vii. The ability of endospore forming bacteria to remain dormant for many years -
- viii. The smallest independently replicating prokaryotes -
- ix. Using bacteriophages to identify bacteria -
- x. The extra cellular state of viruses -
- xi. Origin of life from pre-existing organisms -
- xii. Viruses that integrate genetic material into the host bacteria without destroying the host -
- xiii. Indefinitely maintained pure culture of a bacterium -
- xiv. Artificial introduction of microorganisms into a freshly prepared culture medium -
- xv. A laboratory device used to sterilize material using steam under pressure -

02. Give the name of the scientist who pioneered each of the following.

- i. Immunization -
- ii. Chemotherapy -
- iii. Antiseptic surgery -

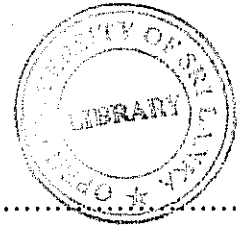
03. In day to day life, microorganisms are used in the following practices. Give **one (01)** example for each.

- i. Pest control -
- ii. Medicinal practices -
- iii. Beverage industry -
- iv. Source of fuel -
- v. Animal food industry -

04. Give one basic use of each of the following in microbiology?

- i. Ocular micrometer -
- ii. Phase contrast microscope -
- iii. Oil immersion objective lens -
- iv. Scanning electron microscope -
- v. Hanging drop preparation -
- vi. Slide culture set up -
- vii. Counting chamber -
- viii. Negative stains -

05. Give the major reasons for the following.



i. Microorganisms are ubiquitous (omnipresent) in nature.

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ii. Viruses can be cultivated 'in vivo' only.

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iii. Some gram positive bacterial cultures may give negative results for gram staining.

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06. a. Indicate **two (02)** methods of differential staining of bacteria.

i.

ii.

b. Name the following used in one of the methods you mentioned above.

i. Primary stain -

ii. Counter stain -

iii. Mordant -

iv. Decolorizing agent -

07. Outline the basic theory behind the following biochemical tests?

i. Hydrogen sulphide test

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ii. Catalase test

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08. Briefly explain the following.

i. Objectives of membrane filtration technique

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ii. Germ theory of disease

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iii. Tyndallisation

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09. Distinguish between the following.

i. Photosynthesis in green algae and bacteria

Green algae

Bacteria

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ii. Acidic and basic dyes used in bacterial staining

Acidic dyes

Basic dyes

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