

**Bago University**  
**Department of Botany**  
**First Semester Examination, March, 2019**

**Forth Year**  
**Botany Specialization**  
**Answer All Questions**

**Bot.4103**  
**Microbiology**  
**Time allowed: (3) Hours**

**I. Determine whether each statement is TRUE or FALSE.**

**(10 marks)**

1. The microbes arise automatically in decomposing inorganic matter.
2. Interferons are produced in animal cells in induced by virus infection.
3. *Lactobacillus viridescens* causes greening of sausage.
4. The electron beam passes through the center of ring-like magnetic condenser.
5. A culture containing only two species of microbe is called pure cultured.
6. Osmophiles require 15-30% sodium chloride for their optimum growth.
7. Amphitrichous has flagella at both the ends either singly or in cluster.
8. The sex pili are helical tubules consisting of a hollow core.
9. Compartmentation of organelles are absent in eukaryotes.
10. Phycoerythrin and phycocyanin absorb longer wavelength of light.

**II. Write correct word to complete the following sentences.**

**(10 marks)**

1. Aquatic microbes serve as food for small ----- animals.
2. *Bacillus coagulans* is a ----- species.
3. Photobacterium causes ----- of meats and fish.
4. Vaccination reduced the incidence of several ----- diseases.
5. The blue light is reflected to the specimen by a ----- mirror.
6. Plasma membrane of prokaryotes lack -----.
7. The monotrichous has a single polar -----.
8. Fimbriae are equipped with ----- properties.
9. Sterols protect the cell from ----- lysis.
10. Sheath consists of ----- substances.

**III. Answer all questions.**

**(10 marks)**

1. Describe the uses of lactic acid, acetic acid and ethanol.
2. What are objective lens?
3. Give the uses of hot air oven.
4. Write short note on mixed culture?
5. Define spores and cysts.

**IV. Answer all questions.**

**(20 marks)**

1. Why does microorganisms are essential to the web of life.
2. Briefly discuss on the colony consistency in the culture characteristics.
3. What is photoautotrophs?
4. Write short notes on the spore germinating of endospore.

**V. Answer any three questions.**

**(30 marks)**

1. Enumerate the steps of isolation by streak plate techniques with relevant diagram.
2. Describe about the log phase in patterns of microbial growth.
3. Discuss the role of mold and yeast in food and diary industries
4. Classify the pili and describe the several functions of fimbriae and pili in bacteria.
5. Explain the sporulation process in bacteria with diagrams.