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**THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME**

FINAL EXAMINATION – 2009/2010

BOTANY

BTU 3101/BTE 5101 – ENVIRONMENTAL AND APPLIED MICROBIOLOGY

DURATION – TWO AND A HALF HOURS (2 ½ HRS)

DATE - 15th June 2010

TIME – 9.30 am – 12.00 nn

Answer any four (04) questions.

01.
 - a. Differentiate between microbial food poisoning (intoxication) and microbial food infection.
 - b. Write a brief account on the causative organisms, symptoms and the preventive measures of any two (02) types of microbial food poisoning.
 - c. Briefly describe the two categories of food infection, giving an example for each category.
02.
 - a. Describe two (02) major conditions that affect the occurrence and distribution of microorganisms in an inland water body.
 - b. Explain briefly the microbiological indicators that are used to determine the quality of water.
 - c. List the characteristic features of an indicator organism used in water testing procedures.
03.
 - a. Describe the properties of soil which affect the abundance, distribution and survival of microorganisms in soil.
 - b. With the help of suitable diagrams and examples, explain one (01) mutualistic association between plants and soil microorganisms.

04. a. List the advantages of producing microbial proteins as an excellent source of food for animals and humans.
- b. Give a concise account of the industrial process and the microorganisms involved on each of the following.
- (i). manufacture of beer
 - (ii). production of vinegar
05. a. What are the components of the immune system?
- b. Differentiate between acquired and innate immunity.
- c. Outline in brief the various types of acquired immunity seen in a human body.
06. Write short notes on any three (03) of the following.
- (i) Microbial spoilage of fruits and vegetables
 - (ii) Methods by which soil fungi resist unfavourable environmental conditions
 - (iii) Activated sludge process in sewage treatment
 - (iv) Standard procedure of sampling of soil for microbiological analysis