LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **CHEMISTRY & ADV. ZOOLOGY**

THIRD SEMESTER – NOVEMBER 2010

**PB 3206 / 3200 - GENERAL MICROBIOLOGY**

Date : 12-11-10 Dept. No. Max. : 100 Marks

Time : 9:00 - 12:00

**PART A** (20 marks)

Answer all questions.

I. Choose the correct answer: (5 x 1 = 5)

1. Which of the following is an example for brown algae?

*a) Chlorella b) Chlamydomonas c) Ectocarpus d) Polysiphonia*

1. Pili represent
2. Extrachromosomal genetic element b) protoplasmic outgrowth of donor cells

c) small flagella d) special bacterial cilia

1. High frequency recombination cells arise when

a) they have multiple F plasmids

b) F plasmid has been incorporated into the bacterial chromosome

c) conjugation and transformation happen at the same time

d) bacterial chromosomes do not break during conjugation

1. Name the pathogen that cause little leaf of brinjal:

a) *Pseudomonas* b) TMV c) CMV d) Mycoplasma

1. Wastewater is characterized by a very low value of

a) turbidity b) BOD c) dissolved oxygen d) dissolved organics

II. State whether the following statements are true or false: (5 x 1 = 5)

1. Fungal cell wall is made of chitin.
2. Nutrient Agar medium is suitable for the cultivation of heterotrophic bacteria.
3. In transformation, the genetic material is transferred through bacteriophage.
4. *Xanthomonas citri* is a gram positive rod shaped bacterium.
5. Spoilage of meat by microbes can be prevented by storage at -20°C.

III. Complete the following: ( 5 x 1 = 5 )

1. The reserve food material in red algae is \_\_\_\_\_\_\_\_.
2. Bacteria which grow at very low temperatures are called \_\_\_\_\_\_\_.
3. Transfer of genetic material between cells by physical contact is called \_\_\_\_\_\_\_.
4. The host where the uredinal stage of *Puccinia* is seen is \_\_\_\_\_\_\_\_\_\_.
5. The organism used in the production of wine is \_\_\_\_\_\_\_\_\_\_\_\_\_.

IV. Answer the following, each in about 50 words: (5 x 1= 5)

1. What are complex viruses?
2. Define organolithotrophs.
3. What are Okazaki fragments?
4. Give the composition of Bordeaux mixture.
5. What is pasteurization?

**PART B**

Answer the following, each answer not exceeding 350 words. Draw diagrams wherever necessary: (5 x 7= 35)

1. a. List out the salient features of microalgae.

(or)

b. Give an account of the characteristic features of fungi.

1. a. Explain briefly about the development of endospore.

(or)

b. Write notes on the methods used for quantification of microorganisms.

1. a. Discuss briefly about the process of conjugation.

(or)

b. Give an account of gene regulation in bacteria.

1. a. Write short notes on citrus canker and its control.

(or)

b. Explain briefly about Tobacco mosaic disease.

1. a. Give an account of Cheese production.

(or)

b. Write short notes on microbial enzymes.

**PART C**

Answer **any three** of the following, each answer not exceeding 1200 words. Draw diagrams wherever necessary: (3 x 15= 45)

1. Discuss in detail about the salient features of viruses and their classification.
2. Write detailed notes on the ultrastructure of a bacterial cell.
3. Give a detailed account of a) transformation and b) transduction.
4. Explain about the symptoms, pathogen, disease cycle and control of Black rust disease in wheat.
5. Explain in detail about the processes involved in the treatment of domestic wastewater.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*