

**M.Sc. DEGREE I SEMESTER EXAMINATION IN ENVIRONMENTAL TECHNOLOGY,
NOVEMBER 2009**

ENV/ENB 2104 ENVIRONMENTAL MICROBIOLOGY

Time : 3 Hours

Maximum Marks : 50

PART – A

(Answer ***ANY TEN*** questions)
(All questions carry ***EQUAL*** marks)

(10x 1 = 10)

I. Write briefly on:

1. Numerical Aperture
2. HEPA Filters
3. Rf value
4. Thermal Death Time
5. Frame-shift mutation
6. Plasmid pBR 322
7. Lysogenic phage
8. Chemolithotrophic autotrophs
9. Methanogens
10. Bioplastic
11. Reverse Transcriptase
12. Carboxysomes
13. Commensalism
14. Denitrifiers
15. *Thiobacillus ferrooxidans*

PART – B

(Answer ***ANY FIVE*** questions)
(All questions carry ***EQUAL*** marks)

(5x 2 = 10)

II. Write short notes on:

1. Tyndallisation
2. UV rays as mutagen
3. Differential staining
4. Cultivation of viruses on cells lines
5. Non-cultivable bacteria
6. Affinity Chromatography
7. Selective media
8. Lac operon

PART – C

(Answer ***ANY FIVE*** questions)
(All questions carry ***EQUAL*** marks)

(5x 3 = 15)

- III. 1. Explain the principles and applications of electrophoresis.
2. Elaborate the structure of animal viruses.
3. Describe the various methods used for the culture of anaerobes.
4. Explain DNA replication in E.coli.

(Turn Over)

5. Discuss on the structure and biological significance of transposable elements.
6. Classify bacteria based on their nutritional requirements. Give examples of each group.
7. Describe the structure and functions of bacterial cellwall.
8. Describe the structure of algae.

PART – D

(Answer **ANY THREE** questions)
(All questions carry **EQUAL** marks)

(3x 5 = 15)

- IV.
1. Describe the various chemicals used for control of microbes.
 2. Explain the methods of gene transfer in bacteria.
 3. Describe the role of microbes in nutrient recycling.
 4. Elaborate the structure and classification of protozoa.
 5. Discuss the effect of environmental factors on growth of microbes.