

30.3.2016



**Doon University**  
**Mid Semester Examination, Second Semester, 2016**  
**School of Environment & Natural Resources**  
**M.Sc. (Environmental Studies)**

**Course: EES-627: Environmental Microbiology & Biotechnology**

**Time Allowed: 2 Hours**

**Maximum Marks: 30**

**Note: Attempt all questions from Sections A, B, C.**

**SECTION: A (Short Answer Type Questions to be answered in about 50 words)**

**Attempt any TEN Questions.**

**(Marks: 1X10=10)**

1. What is the bacterial heredity material?
2. What do you understand by the term genetically engineered microorganism?
3. Describe the term saprophytes.
4. What are obligate autotrophs?
5. What is transduction?
6. Describe the role of Edward Jenner in Microbiology.
7. Who is the father of Microbiology?
8. What do you understand by the Sterilization?
9. Describe the term Streptococcus.
10. Explain "Germ Theory of Diseases."
11. What is the Mycoplasma?
12. Describe the term mesophiles.

**SECTION: B (Short Answer Type Questions to be answered in about 250 words)**

**Attempt any FIVE Questions.**

**(Marks: 2X5=10)**

1. Describe the freshwater environment.
2. Explain the different growth phases in bacterial life cycle.
3. What are differences between gram positive and gram negative bacteria?
4. What are the differences between autotrophy and heterotrophy?
5. Describe the different types of media used for bacterial growth.
6. What are the Bacteriophages?
7. Write short notes on
  - a) Solid media
  - b) Transformation
  - c) cell membrane
  - d) pleomorphic
8. Describe the Air microbiology.

**SECTION: C (Long Answer Type Questions to be answered in about 750 words)**

**Attempt any ONE Question.**

**(Marks: 10X1=10)**

1. What are the genetically engineered microorganisms? Describe the various factors affected the genetically engineered microorganism.

OR

Describe the cell structure of bacteria.