



DOON UNIVERSITY, DEHRADUN
Final Semester Examination, Second Semester, 2013
School of Environment & Natural Resources

M.Sc. (Environmental Studies)
Course: EES-617: Environmental Microbiology

Time Allowed: 3 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: 1x 8=8)

1. Which group of fauna is known as soil engineers and why?
2. Name any two antibiotics and microorganisms producing them
3. Differentiate between Rhizosphere and Phyllosphere
4. Name the enzyme and gene involved in N₂ fixation?
5. What is denitrification?
6. What is bacterial chemotaxis?
7. Explain following terms: Probe, Primer,
8. Explain following terms: Virioids, Pro-phage
9. What are the various PAHs? How they are toxic to Human Beings?
10. What are various forms of Viruses?
11. What are various forms of lifecycle of Viruses?
12. Define basic functioning of PCR based technique in isolation of Microbes?

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

Answer any FOUR Questions.

(Marks: 3x4=12)

1. Discuss the role of micro organisms associated with waste water treatment and environment.
2. Name any one disease caused by protozoa. Discuss in detail the life history of the protozoa causing that disease.
3. What are important interactions naturally taking place among the microorganisms? Discuss any one such interaction between the microbial groups.
4. Discuss the important features of algal classification. Name the important divisions of algae and their characteristic features.
5. What is important factors affecting bacterial growth? Discuss in detail the oxygen toxicity in bacteria.
6. What are various mode of transformation of toxic metals by microbes?

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

Attempt any TWO Questions.

(Marks: 5 x 2=10)

1. What are the important natural polymers of plants? Discuss the decomposition of major natural constituents of plants with example.
2. What are plasmids? Discuss the role of plasmid in microbiology
3. Discuss the characteristics of Viruses, with its method of multiplication through lytic and lysogenic cycle?
4. What are the nutritional requirements of bacteria? How bacteria are classified based on their nutritional requirements.