6. Briefly explain the 5 factors which affect the formation of new species from existing species. 10

7. Discuss the followings

   i. Cells and enzymes immobilization

   ii. Physiological roles of biosurfactants 5+5=10

8. Define biofiltration. Write the 8 stages of a biodegradation study. 2+8=10

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B.Tech Even Semester Examination, May, 2025

Agricultural Engineering/ Computer Science & Engineering / Electronics & Communication Engineering

(8th Semester)

Course No: AE-A03

[Open Elective (Environmental Microbiological Principles)]

Full Marks: 50

Pass Marks: 25

Time: 2 hours

Note:

1. Attempt any five questions.
2. Begin each answer in a new page
3. Answer parts of a question at a place
4. Assume reasonable data wherever required
5. The figure in the right margin indicates full marks for the question
6. All the mathematical symbols and abbreviations have their usual meanings.

1. Define evolution of living organisms? Explain the important theories of evolution. 2+8=10

2. Write the short notes on (i) Ecological pyramid(ii) Food web 5+5=10

3. What is estuary? Briefly explain the phosphorus cycle. 2+8=10

4. Write the short notes on bioremediation and phytoremediation. 5+5=10

5. What do you mean by microbial growth curve? Enumerate the environmental factors influencing the growth of microbes. 2+8=10