

• All questions are compulsory.

• Draw diagram wherever necessary

Q I. (A) Explain the term. (Any 4)

(8)

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|-------------------------|---------------|
| 1. Negative interaction | 5. Antagonism |
| 2. commensalism | 6. Predation |
| 3. Protocooperation | 7. Synecology |
| 4. Mutualism | 8. Habitat |

Q I. (B) Explain any two of the following. (Any 2).

(12)

1. Nitrogen cycle
2. Sulphur cycle
3. Antagonism with suitable example.
4. Amensalism with suitable example.

Q II. (A) I) State true or false and correct the sentence if false. (Any 2)

(4)

1. Air possesses normal flora.
2. The germicidal lamp that is used in ultra violet light is a low pressure tungsten lamp.
3. The production of ammonia is an essential stage in the formation of nitrate in soil.
4. Azotobacter never produces cysts.

Q II. (A) II) Explain the term. (Any 2)

(4)

1. Droplet
2. Product sanitation.
3. Rhizosphere.
4. Operating room sanitation.

Q II. (B) Answer (any two) of the following.

(12)

1. Explain in brief: Enumeration of bacteria in air by using Hollander and Dalla Valle sampler.
2. Explain in brief: Enumeration of bacteria in air by using Kluyver and Visser sampler.
3. Effect of photosynthetic bacteria on soil.
4. Explain in brief: Enumeration of bacteria in air by using filtration and sedimentation.

Contd/...2

Q.III (A) Explain (any four) of the following (08)

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|---------------------|--------------------|
| 1. Coliforms | 5. Reverse Osmosis |
| 2. Activated Sludge | 6. Combined Sewers |
| 3. BOD | 7. Ozonation |
| 4. Wetlands | 8. Composting |

Q. III (B) Answer (any two) of the following.**(12)**

1. Describe the tertiary treatment of wastewater.
2. Give a brief account on trickling filters.
3. Explain the role of indicator microorganisms in bacteriological analysis of water.
4. Describe in brief about anaerobic process of stabilization of sewage

Q IV. Write a note on (Any 3)**(15)**

1. Succession of population.
2. Commetaboiism
3. Asymbiotic nitrogen fixation
4. Enumeration of bacteria in air by centrifugation (Well's sampler).
5. Disinfection of potable water.
6. Oxidation ponds
