

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 1136 E Your Roll No.....

Unique Paper Code : 253403

Name of the Course : B.Sc. (Hons.) Microbiology

Name of the Paper : Microbial Ecology [MIHT-407]

Semester : IV

Duration : 3 Hours

Maximum Marks : 75

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question No. 1 is compulsory.
3. Attempt five questions in all.
4. Attempt all parts of a question together.

1. (a) Define the following giving a suitable example (any 5) : (10)  
Psychrophile, Barophile, Osmophile, Oligotroph, Pleuston, Bioluminescent bacteria.

(b) Name the micro-organism commonly known as sewage fungus. (1)

2. Write short notes on the following (any 4) :

(i) Septic tank

(ii) Activated sludge process

(iii) Syntrophism

(iv) Bioleaching

(v) Biodeterioration of textiles (4×4=16)

3. Differentiate among the following (any 4) :

(i) Autotrophic and heterotrophic succession

P.T.O.

- (ii) Habitat and niche
  - (iii) Trickling filter and rotating biodisc
  - (iv) Ammonification and nitrification
  - (v) Lotic and lentic habitat (4×4=16)
4. (a) Briefly discuss biological control. (5)
- (b) Discuss the role of rumen microflora in digestion. (5)
- (c) What are Mycorrhiza ? Write about its ecological significance ? (6)
5. Comment on the following (any 4) :
- (i) Cellulose degradation
  - (ii) Rhizosphere effect
  - (iii) Composting
  - (iv) Soil formation
  - (v) Phosphorus cycle (4×4=16)
6. (a) Give an example of the following (any 6) :
- (i) Actinorrhizal association
  - (ii) Bacterial biofertilizer
  - (iii) Microaerophilic nitrogen fixer
  - (iv) Microorganism with active spore dispersal mechanism
  - (v) Skin inhabiting microbe
  - (vi) Ammensalism
  - (vii) Endosymbiont (1×6=6)
- (b) Define (any 5) :
- Homeostasis, Phylloplane, BOD, Rhizosphere, Human microbiomics, nitrate pollution (2×5=10)