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Your Roll No. ....

1033

**B.Sc. (Hons.)/II** **C**

**MICROBIOLOGY—Paper IX**

**(Microbial Ecology)**

**(Admissions of 2004 and onwards)**

*Time : 3 Hours*

*Maximum Marks : 60*

*(Write your Roll No. on the top immediately on receipt of this question paper.)*

Attempt any *five* questions in all.

*All* questions carry equal marks.

**Section A**

1. (a) Write the contributions of the following scientists in the field of microbial ecology : 6

(i) Winogradsky

(ii) Kluver

(iii) Jensen

P.T.O.

(b) Briefly discuss the symbiotic nitrogen fixation. 6

2. Discuss the ecological significance of the following microorganisms (any six) : 6×2=12

(i) *Photobacterium*

(ii) Cyanobacteria

(iii) *Azospirillum*

(iv) Methanogens

(v) White rot fungi

(vi) Halophiles

(vii) Thermophiles

3. Write short notes on the following : 4×3=12

(i) Microbial succession

(ii) Humus formation

(iii) S-reductive cycle

(iv) Nitrification.

**Section B**

4. Differentiate between the following (any *three*) :  $3 \times 4 = 12$
- (i) BOD and COD
  - (ii) Sanitary landfills and Incineration
  - (iii) Combined and separate sewerage system
  - (iv) Linear ABS and normal ABS.
5. (a) List different types of anaerobic sewage treatment methods and discuss any *two* of these methods in detail. 6
- (b) Comment on the biodegradation of a synthetic polymer. 3
- (c) Why coliforms are used as indicator organisms for assessing microbial quality of drinking water ? 3

6. Discuss the following briefly (any *three*) : 3×4=12

(i) Degradation of benzene

(ii) Eutrophication

(iii) Acid mine drainage

(iv) Role of microorganisms in metal corrosion.