2008

MICROBIOLOGY

PAPER—XIX

Full Marks : 40

Time : 2 hours

Answer any **two** questions from each Group

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

GROUP—A

[*Marks* : 20]

Answer any *two* questions from the following

1. (*a*) Differentiate between ecotone and edge.

(*b*) Differentiate between little omnivory and frequent omnivory.

(*c*) Differentiate between gene frequency and genotype frequency.

(*d*) Differentiate between grazing pathway and detritus pathway of energy flow.

(*e*) Comment on types of food web. 2×5

2. (*a*) Concept of source-sink population.

(*b*) Population growth curve.

(*c*) Calculate the gene frequency of *M* and *N* on the basis of following blood types in a population sample :

M-123, *MN*-72, *N*-10. 4+3+3

3. Explain in what way stability of an ecosystem is maintained through feedback control. Distinguish between resistance stability and resilience stability. Define biodiversity. 5+3+2

GROUP—B

[*Marks* : 20]

Answer any *two* questions

4. (*a*) Compare the efficiencies of trickling filter with activated sludge treatment.

(*b*) What is Coliform index ?

(*c*) What is membrane filter test? State its significance. (3 + 3) + 1 + 3

5. (*a*) What is bioremediation?

(*b*) Compare the advantages and disadvantages of intrinsic, *ex situ*, and *in situ* bioremediation.

(*c*) How PCBS are degraded?

(*d*) How microbiologicals copper is recovered from low grade ore? 1 + 3 + 3 + 3

6. Write notes on (any *four*) : $2\frac{1}{2} \times 4$

(*i*) Barophiles

(*ii*) Acidophiles

(*iii*) Xenobiotics substances

(*iv*) Biosafety Laboratories

(*v*) Biomagnification

(*vi*) Eutrophication.