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PG/IVS/MICB/XIX/09

2009

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

Illustrate the answers wherever necessary

**Write the answers questions of each Group
in separate books**

GROUP—A

[Marks : 20]

(Turn Over)

1. (a) Differentiate between managed and unmanaged ecosystem. Give one example of each.
- (b) Define biodiversity. Name four biodiversity hot spots of India.
- (c) Differentiate between direct interaction and indirect interaction between two species.
- (d) What are 'overshoot' and 'dieback' of population?
- (e) Distinguish between a biophage and a saprophage. 2×5
2. Discuss universal model of energy flow. Why it is called universal model? Add a note on the two channel energy flow model. 6+1+3

3. (a) What do you understand by group properties of a population ?
- (b) What are density independent and density dependent mechanisms of population regulation ?
- (c) Deduce Hardy - Weinberg genotype equilibrium in a population. 2 + 3 + 5

GROUP—B

[Marks : 20]

4. (a) Briefly describe the steps of aeromicrobiological pathway.
- (b) Germ warfare has been a combat weapon for centuries — explain. 5 + 5

5. Write notes on any *four*:

10

(i) Bioremediation

(ii) Eutrophication

(iii) Bioaugmentation

(iv) Marine bacteria and its importance

(v) Biosafety.

6. What is portability of water ? Narrate the significance of microbes in water quality assessment. What is biosolid ?

2 + 6 + 2