

2020

MICROBIOLOGY — GENERAL

Paper : DSE-A-2

(Microbes in Environment)

Full Marks : 50

The figures in the margin indicate full marks.

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

Day 3

Question no. 1 is compulsory and answer **any four** questions.

1. Answer **any five** questions : 2×5
- (a) What are extremophiles?
 - (b) How are hemicelluloses degraded by microorganisms?
 - (c) Define synergism. Give example.
 - (d) What is IMViC test?
 - (e) Why is soil considered as microenvironment?
 - (f) Give example and use of symbiotic luminiscent bacteria.
 - (g) What is tertiary sewage treatment?
 - (h) How phosphate gets immobilized in phosphorus cycle?
 - (i) How are nitrates reduced in nitrogen cycle?
 - (j) Name one microbe and its role in sulphur cycle.
2. (a) How do microbes produce methane?
(b) Describe different phases of sulphur cycle.
(c) What role is played by leg hemoglobin in nitrogen fixation?
(d) What is nitrification? 2+4+2+2
3. (a) Mention the sources of solid waste and their types.
(b) Briefly describe the methods of secondary treatment of waste water.
(c) Name two pesticide degrading bacteria and write down their activity. (2+2)+4+2
4. (a) Write short notes on :
(i) Composting (ii) Sanitary landfill.

Please Turn Over

(b) Discuss the following types of microbial interaction with example :

(i) Amensalism

(ii) Parasitism.

(2½+2½)+(2½+2½)

5 (a) What are indicator microorganisms?

(b) What should be the characteristics of indicator microorganism?

(c) Why are confirmatory and completed tests essential for the safety of potable water?

(d) How does membrane filter technique assure the quality of water sample? Discuss the method.

2+3+2+3

6. (a) What type of microflora are present in marine habitats? What are their role in aquatic environment?

(b) How do microbes thrive at high and low temperature?

(c) What are barophiles?

(d) How is lignin degraded by microbes?

(2+2)+2+2+2

7. (a) Write short notes on :

(i) Oxidation ponds

(ii) Septic tank.

(b) What are normal microflora of human body? What role is played by them?

(3+3)+(2+2)
