

**2024/FYUG/ODD/SEM/  
BTCDCS-102T/239**

**FYUG Odd Semester Exam., 2024**

**BIOTECHNOLOGY**

**( 1st Semester )**

Course No. : BTCDCS-102T

**( Environmental Biotechnology )**

Full Marks : 70

Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

**UNIT—I**

1. Answer any *two* from the following :  $2 \times 2 = 4$ 
  - (a) Write a note on microbial hydrogen production.
  - (b) Give a short account of coal.
  - (c) Define modern fuel.
2. Give a detailed account of role of methanogenic bacteria in the production of biogas. Draw a typical biogas plant. Point out the significance of biogas.  $6+2+2=10$

**OR**

3. Describe conventional fuel and its environmental impact. 10

( 2 )

**UNIT—II**

4. Answer any *two* from the following :  $2 \times 2 = 4$   
(a) Write a note on vermicomposting.  
(b) Define sewage. What is its composition?  $1 + 1 = 2$   
(c) Give a short account of composting.

5. Describe the treatment of municipal waste and industrial effluents.  $5 + 5 = 10$

**OR**

6. Give an illustrated account of waste management and energy production.  $6 + 4 = 10$

**UNIT—III**

7. Answer any *two* from the following :  $2 \times 2 = 4$   
(a) Write a note on bioremediation.  
(b) Write about degradation of cellulose using microbes.  
(c) What is phytoremediation?

8. Describe degradation of pesticides by micro-organisms. 10

**OR**

9. Give a detailed account of biostimulation. Add a note on bioaugmentation.  $6 + 4 = 10$

( 3 )

**UNIT—IV**

10. Answer any *two* from the following :  $2 \times 2 = 4$   
(a) Write about IPM.  
(b) Give a brief account of VAM.  
(c) Write a note on nitrogen fixers.

11. Define biofertilizers. Describe various types of biofertilizers. Point out their significance.  $2 + 6 + 2 = 10$

**OR**

12. Define biopesticides. Give a detailed account of biocontrol agents.  $3 + 7 = 10$

**UNIT—V**

13. Answer any *two* from the following :  $2 \times 2 = 4$   
(a) Write a note on biosensors.  
(b) Give a short account of bioleaching.  
(c) Write about microbial enrichment of gold.

14. Describe remote sensing and GIS for environmental analysis. 10

**OR**

15. Give an illustrated account of the principle and applications of nanotechnology. 10

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