

(6 pages)

Reg. No. :

Code No. : 30788 E Sub. Code : ESBO 12

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Botany

Skill Enhancement Course — ENVIRONMENTAL
BIOTECHNOLOGY

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The historical monument that is affected by acid rain is _____
- (a) Tanjai Periya Kovil
 - (b) Golden temple
 - (c) Taj Mahal
 - (d) Pisa tower

2. Major factor for water pollution is

- (a) Mathura refinery
- (b) Smoke
- (c) Industrial effluents
- (d) All of the above

3. The waste water treated with micro organisms in the absence of oxygen is called

- (a) Aerobic
- (b) Anaerobic
- (c) (a) and (b)
- (d) None of the above

4. Which of the following is used in biosorption?

- (a) Staphylococcus
- (b) Streptococcus
- (c) Pseudomonas
- (d) All the above

5. An example for xenobiotics is

- (a) Polychlorinated biphenyls
- (b) Carbon
- (c) Hydrogen
- (d) Oxygen

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6. Biosorption is exhibited in
(a) Bacteria (b) Algae
(c) Fungi (d) All of the above
7. The use of living microorganisms to degrade environmental pollutants is called
(a) Disinfection (b) Bioremediation
(c) Sedimentation (d) Filtration
8. Which of the following microbe is used in bioremediation?
(a) Pseudomonas (b) Chlorella
(c) Methanobacterium (d) Volvox
9. Which enzyme is used in bioleaching?
(a) Ligase (b) Peroxidase
(c) Glucose oxidase (d) Lipase
10. The bacterium involved in bioleaching is
(a) Thiobacillus thiooxidans
(b) Pseudomonas
(c) Streptococcus
(d) E. coli

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PART B — (5 × 5 = 25 marks)
Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) How soil is polluted?
Or
(b) Write short notes on environment.
12. (a) How are heavy metals removed by biosorption?
Or
(b) Write notes on objectives of sewage treatment.
13. (a) Write short notes on phenol degradation.
Or
(b) Write short notes on xenobiotics.
14. (a) What is insitu and exsitu bioremediation?
Or
(b) Tabulate the difference between insitu and exsitu bioremediation.
15. (a) Write notes on bioleaching.
Or
(b) What is biocorrosion? Explain it.

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PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe water pollution.

Or

- (b) Give a detailed account on air pollution.

17. (a) How are pesticides removed by biosorption?

Or

- (b) How are oil spills removed by microorganisms?

18. (a) Give a brief account on degradation of pentachlorophenol.

Or

- (b) Discuss about the degradation of polychlorinated biphenyl degradation.

19. (a) Discuss about exsitu bioremediation.

Or

- (b) Describe insitu bioremediation.

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20. (a) Describe biomineralization.

Or

- (b) Give a detailed account on biofilms.
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