

SECOND SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2014

(UG—CCSS)

Complementary Course—Biotechnology**BT 2C 02—ENVIRONMENTAL BIOTECHNOLOGY**

Time : Three Hours

Maximum : 30 Weightage

I. Objective type questions. Answer *all* questions :

A. Multiple choice :

1 Earthworm used in vermin composting :

- (a) *Lumbricus rubellus*. (b) *Eisenia foetida*.
(c) *E. buchholzi*. (d) All of the above.

2 Cry protein is produced by :

- (a) *B. cereus*. (b) *B. subtilis*.
(c) *B. thuringiensis*. (d) *B. stearothermophilus*.

3 Which of the following have NOT been used in various bioconversions ?

- (a) Unicellular bacteria. (b) Actinomycetes.
(c) Molds. (d) Viruses.

4 "Superbug" was a name coined for organisms engineered for

- (a) Antibiotic production. (b) Probiotic production.
(c) Hydrocarbon degradation. (d) Enzyme production.

B. Fill in the blanks :

5 Ozonation of water is an example of _____

6 A nitrogen fixing symbiotic bacteria is _____

7 APHA stands for _____

8 Enzyme used in cellulose degradation.

C. Name the following :

9 Major component of biogas.

10 Name an organism used for bioleaching of iron.

11 A bacterial pesticides.

12 Name an acetogenic bacteria.

(12 x $\frac{1}{4}$ = 3 weightage)**Turn over**

II. Short Answer type questions. Answer all *nine* questions :

- | | |
|---------------------------|--------------------|
| 13 Methanogenesis. | 14 Biodiesel. |
| 15 BOD. | 16 Biopesticide. |
| 17 Packed column reactor. | 18 Biocrubber. |
| 19 Activated sludge. | 20 Eutrophication. |
| 21 Biosorption. | |

(9 x 1 = 9 weightage)

III. Short Essay or Paragraph questions. Answer any *five* questions :

- 22 Write an account on the process of **biobleaching**.
- 23 Management of **lignocellulose** residues.
- 24 **Biofertilisers** production and applications.
- 25 Anaerobic methods for waste water treatment.
- 26 **Biogas** production.
- 27 **Biofilters**.
- 28 Compare contact **digestors** and packed column reactors.

(5 x 2 = 10 weightage)

IV. Essay questions. Answer any *two* questions :

- 29 Explain microbial technologies used for the **bioremediation** of **xenobiotics**.
30. Describe the management of solid waste as a source of energy.
- 31 Detail microbiology and biochemistry of waste water treatment.

(2 x 4 = 8 weightage)