D 32517 (Pages 3) Name.....

Reg. No.....

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, JANUARY 2013

(CCSS)

Biotechnology

BT 1C 02—ENVIRONMENTAL BIOTECHNOLOGY (Complementary)

Time : Three Hours Maximum : 30 Weightage

I. Answer all *twelve* questions :—

1 1st world climate conference held on :

(a) Geneva. (b) London.

(c) Vienna. (d) Brazil.

2 The term ecosystem was proposed by :

(a) Carl Mobino. (b) A. Tansely.

(c) E.Odum. (d) E. Clement.

3 An example of sedimentary type of nutrient cycle :

(a) Nitrogen cycle. (b) Carbon cycle.

(c) Phosphorus cycle. (d) None of the above.

4. The direction of energy flow :

(a) Unidirectional. (b) Bi-directional.

(c) Cyclic. (d) Any of these.

5 Water pollution is caused by :

(a) CO. (b) PAN.

(c) Fertilizer. (d) Fossil fuels.

6 Minanata disease is an example of :

(a) Air pollution. (b) Water pollution.

(c) Marine pollution. (d) All of these.

7 The bacteria which oxidized ammonia to nitrite :

(a) Nitrobacter. (b) Nitrosomones.

(c) Pseudomonas. (d) Aerobacter.

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8 The key enzyme involved in nitrogen fixation :

(a) Hydrogenase. (b) Nitrogenase.

(c) Leghaemoglobin. (d) None of these.

9 Phosphate solubilizing organism :

(a) Bacillus. (b) E. Coli.

(c) Klebsiella. (d) Candida.

10 The common Earth worm species used for vermicomposting :

(a) Eisenia foetide. (b) Erwinia carotovora.

(c) Streptomyces. (d) Histoplasma.

11 Anaerobic bacteria fix nitrogen non-symbiotically :

(a) Rhizobium. (b) Desulfovibrio.

(c) Azotobacter. (d) Bacillus.

12 Which of the following is a method of disinfection :

(a) Sedimentation. (b) Filteration.

(c) Chlorination. (d) Coagulation.

(12 x $^1/_4$ = 3 weightage)

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

13 Biomagnification.

14 Sedimentation.

15 Bioremediation.

16 Commensalism.

17 Bacterioids.

18 Leg Haemoglobin.

19 Indicator organism.

20 Phyllosphere.

21 Green-manure.

(9 x 1 = 9 weightage)

ILL Short Essay (Any *five).* Explain the following :-

22 Vermicomposting.

23 Components of ecosystem.

24 Phosphorus cycle.

25 Kinds of pollution.

26 Energy flow in an ecosystem.

27 Trickling filter.

28 Role of Rhizosphere in plant-Microbe interactions.

(5 x 2 = 10 weightage)

IV. Essay questions :

29 What are different steps on water purification methods ? Explain MPN method to check purity of water.

30 Explain the process and molecular mechanism of symbiotic nitrogen fixation.

31 Explain pond as a model ecosystem. Compare pond ecosystem with green land ecosystem.

(2 x 4 = 8 weightage)