[93]

Sardar Patel University

Biotechnology (NC), Semester –V

Wednesday, 30th December 2020

US05CBIT-05

(Environmental Biotechnology)

Time: 02:00-04:00pm   **Marks: 70**

Q-1   **Multiple choice question (Attempt all)**   10

1. Which of the following is called the secondary pollution?
   - a) PANs
   - b) Ozone
   - c) Carbon monoxide
   - d) Nitrogen dioxide

2. The concentration of _____ is important indicator of the health of an aquatic ecosystem.
   - a) DO
   - b) COD
   - c) Colour
   - d) alkalinity

3. The optimum pH of acidophilic bacteria of sulpholobus sp is _____.
   - a) 2-3
   - b) 3-4
   - c) 4-6
   - d) 7

4. Among the following which are copper metal containing ores?
   - a) Arsenic
   - b) Pyrite
   - c) Zinc sulphide
   - d) Chalcocite

5. _____ leaching is mostly used where huge piles are collected from waste residues.
   - a) Vat
   - b) Dump
   - c) In-situ
   - d) All of the above

6. Bioaugmentation involves?
   - a) Eliminating sludge
   - b) Plants used for bioremediation
   - c) Addition of microbes to a clean site
   - d) All of the above

7. Which of the following bacterium is called as the superbug that could clean up oil spills?
   - a) *E. coli*
   - b) *Pseudomonas Putida*
   - c) *Pseudomonas denitrificans*
   - d) *Bacillus subtilis*

8. A process involving usage of plants to degrade pollutants is ?
   - a) Composting
   - b) Biopile
   - c) Phytoremediation
   - d) Land farming

9. Production of bioplastic in cotton fibers as it contains _____ enzyme.
   - a) Accetoacetyl CoA
   - b) β-ketothiolase
   - c) PHB syntase
   - d) All of the above

10. _____ Enzyme detects meat freshness in biosensor.

a) Monoamine oxidase c) Invertase
b) Glucose oxidase d) Urease

Q-2   **Answer the following (Attempt all)**   08
1. Bioplastic emits green house gases. State true or false.
2. _____ Biosensor use the movement of electrons produced during redox reaction.
3. The process of extraction of metal by microorganism is called ____.
4. *Thiobacillus* group of bacteria are chemolithotrophic. State true or false.
5. Flurosis occurs due to biomagnifications of ____.
6. Composting is a method of in situ bioremediation. State true or false.
7. A secondary waste water treatment uses ____ to consume waste.
8. High concentration of DO is harmful for aquatic life. State true or false.

Q-3   **Short Question (attempt any ten)**   20
1. W hat is the function of aeration tank?
2. Give suitable difference between BOD and COD.
3. What do you understand by bioleaching?
4. What is Smog and discuss it as pollutant.
5. Give example of bacteria used in bioleaching.
6. What is biobenification?
7. Give limitation of phytoremediation.
8. Define Bioaugmentation and Biostimulation.
9. What are xenobiotic compounds and how are they hazard to environment?
10. Give properties of Biosensor.
11. Give application of Bioplastic.
12. Give application in Biosensor.

Q-4   **Long Question (any four)**   32
1. Discuss various pollutants in Air Pollution.
2. Discuss secondary treatment of waste water treatment.
3. Explain the mechanism of bioleaching of copper metal from ore.
4. Give general properties microorganism involved in leaching and give significance of leaching.
5. Give a detail account ob Biomagnifications with suitable examples.
6. Discuss in situ and ex –situ bioremediation.
7. Give principle, diagram and working of Biosensor.
8. Discuss approaches for production of Bioplastic.

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[2]