

[41/A11]

Seat No. \_\_\_\_\_

No. of Printed Pages : 2

**SARDAR PATEL UNIVERSITY**

**B.Sc Examination, Fifth Semester**

**Biotechnology**

**USO5CBIT-05**

**(Environmental Biotechnology)**

DT: 20/11/2019, Wednesday

Time: 10:00-1:00pm

Marks: 70

- Q-1 Multiple questions(Attempt All) 10**
1. Secondary pollutants are formed by interaction among \_\_\_\_\_ pollutants
    - a) Primary
    - b) Secondary
    - c) Tertiary
    - d) Quarterly
  2. Ultraviolet radiation from sunlight causes a reaction that produces?
    - a) Fluorides
    - b) Carbon dioxide
    - c) Sulphur monoxide
    - d) ozone
  3. The amount of oxygen required for biological oxidation is called?
    - a) COD
    - b) DO
    - c) BOD
    - d) All of the above
  4. Among the following which are copper metal containing Ore?
    - 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. The process of converting environmental pollution into harmless products by naturally occurring microbes is called?
    - a) Ex-situ bioremediation
    - b) Intrinsic bioremediation
    - c) Extrinsic bioremediation
    - d) All of the above
  7. Which of the following biosensor use the movement of electrons produced during redox reaction?
    - a) Amperometric biosensor
    - b) Optical biosensor
    - c) Potentiometric Biosensor
    - d) Calorimetric Biosensor
  8. Which of the following is the physico-chemical component?
    - a) Enzyme
    - b) Antibody
    - c) Transducer
    - d) Cell
  9. The method for In-situ bioremediation?
    - a) Biosparging
    - b) Bioreactor
    - c) Land filling
    - d) composting
  10. For the remediation of ground water?

(1)

(PTO)

- a) Phyto transformation
- b) Phytovolozation

- c) Bio augmentation
- d) Rhizofiltration

<b>Q-2</b>	<b>Short question( attempt any ten)</b>	<b>20</b>
	1. What is eutrophication and discuss its consequences?	
	2. Give application of UASB?	
	3. Give suitable difference between BOD and COD	
	4. Give significance of bioleaching	
	5. What is dump leaching?	
	6. Give general properties of microorganism involved in bioleaching.	
	7. Give advantages of Phytoremediation.	
	8. Define : Bioventing and Bioaugmentation	
	9. Give application of Bioremediation	
	10. What are the properties of a successful biosensor	
	11. Give various application of Bioplastics	
	12. Discuss the optical Biosensor.	
<b>Q-3</b>	<b>A</b> Give an account on tertiary treatment of waste water.	<b>06</b>
	<b>B</b> Write short note on TOC	<b>04</b>
	<b>OR</b>	
	<b>A</b> Discuss various Air pollutants	<b>06</b>
	<b>B</b> Write short note on Activated Sludge process.	<b>04</b>
<b>Q-4</b>	<b>A</b> Give a detail account of Bioleaching of Copper.	<b>10</b>
	<b>OR</b>	
	<b>A</b> Discuss various types of Microorganisms used for Bioleaching.	<b>06</b>
	<b>B</b> What do you understand by In-situ Bioleaching?	<b>04</b>
<b>Q-5</b>	<b>A</b> Give an account of Biomagnifications with suitable examples	<b>05</b>
	<b>B</b> Write short note on Phytoremediation.	<b>05</b>
	<b>OR</b>	
	<b>A</b> Discuss various techniques for Ex-situ Bioremediation	<b>06</b>
	<b>B</b> What do you understand by Superbug?	<b>04</b>
<b>Q-6</b>	<b>A</b> Discuss principle and working of Biosensor and discuss any two types of Biosensor.	<b>10</b>
	<b>OR</b>	
	<b>A</b> Discuss various approaches for production of PHB plastics	<b>06</b>
	<b>B</b> Give an account on various application of Biosensor.	<b>04</b>

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