

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

# SL-109

September-2020

B.Sc., Sem.-VI

## CC-310 : Biotechnology (Environment Biotechnology)

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) Draw figures where necessary.
  - (2) Show question number against each answer.
  - (3) Figures in right are marks.
  - (4) Answer any Three out of initial Eight main questions, Question 9 is compulsory

1. (A) Discuss various methods for solid waste treatment and give its importance. 7  
(B) Describe methods for testing drinking water. 7
2. (A) Describe Indian standards for safe drinking water. 7  
(B) Explain treatment of liquid waste by activated sludge process. 7
3. (A) Discuss the relationship between molecular structure and Biodegradability giving suitable examples. 7  
(B) Explain abatement of harmful wastes by Bioventing and Bioslurping. 7
4. (A) Describe material prone to biodeterioration and means to control it. 7  
(B) List heavy metals acting as pollutant and explain its sources and harmful Effects. 7
5. (A) Explain principle of microbial leaching and describe popular designs for mining by leaching. 7  
(B) Discuss biotechnological uses of Cellulose and Lignins as substrate. 7
6. (A) Explain sources and advantages of Methane and Hydrogen fuels. 7  
(B) Discuss principle of Microbially-enhanced Oil Recovery. 7
7. (A) Write a detailed note on Environmental Impact Assessment. 7  
(B) Explain harmful effects and controls of Sea-weed and algal blooms. 7
8. (A) Describe the sources of Green-house gases and its harmful effects. 7  
(B) Summarize importance of biodiversity and means to conserve it. 7

9. Answer in short : (any **Eight**)

8

- (A) What is BIS limit for Chloride and Chlorine levels in public drinking water ?
- (B) Arsenic is a natural ground water contaminant. True/False
- (C) What is the final step for waste water treatment ?
- (D) What is step after activated sludge process during wastewater treatment ?
- (E) The Biological Oxygen Demand (BOD) is regarded as indicative of
  - (a) Measure of Biodegradable wastes
  - (b) Amount of Oxygen dissolved
  - (c) Measure of suspended wastes
  - (d) Quantity of Oxygen in Biological material
- (F) Name type of bacteria dominating composting process
- (G) What is Biopiling ?
- (H) Name the popular bacterium having cryptic plasmid for degradation of aromatic compounds.
- (I) Which of the following compounds undergoes biomagnification ?
  - (a) Phenol
  - (b) PAHs
  - (c) DDT
  - (d) Mineral oil
- (J) Name any major oil spill mishap
- (K) What is Bioremediation ?
- (L) Name two type of industries polluting environment with dyes.
- (M) Name bacterial employed for leaching of Uranium from ore.
- (N) Which organism is commercially used for bioleaching of Copper ?
- (O) Which monomers polymerize to form Lignin ?
- (P) Give two industrial uses of Cellulose.
- (Q) Match the correct Metal resource and source Ore
  - (A) (B)
  - (a) Gold Pyrite
  - (b) Copper Calaverite
  - (c) Iron Argentite
  - (d) Silver Chalcopyrite
- (R) Name two pollutants that promote Eutrophication.
- (S) What is Sustainable Development ?
- (T) National Biodiversity Authority (NBA) in India was established by act in the year
  - (a) 2002
  - (b) 2003
  - (c) 2013
  - (d) 2010
- (U) Which air pollutants lead to Acid-rain ?
- (V) What is Integrated Pest Management ?