

• **Question Bank**

Class : T. Y. B. Sc. (Semester - V)
Paper Code: EVS 3506
Paper: II **Title of Paper: Environmental Biotechnology**

• **MCQ Question**

- 1) Which of the following is has not emerged as an international issue through the advent of environment biotechnology?
 - a) Global warming
 - b) Marine pollution
 - c) Oil spills
 - d) Top soil erosion**
- 2) Water logging and weed infestation can be classified under which type of issue?
 - a) National
 - b) Regional**
 - c) Municipal
 - d) International
- 3) Which of the following method of disposal of solid waste leads to release of organic pollutants into the environment?
 - a) Land filling
 - b) Incineration**
 - c) Phytoremediation
 - d) Biological treatment
- 4) Which of the following is not a reason behind air pollution?
 - a) Industrialization
 - b) Vehicular exhaustion
 - c) Deforestation
 - d) Afforestation**
- 5) The major cause of environmental degradation is ____
 - a) Bio-magnification
 - b) Nitrogen deposition**

- c) Quorum quenching
 - d) Lyophilization
- 6) Oil spills have been considered as a major threat to world environment, especially _____
- a) Marine ecosystem**
 - b) Terrestrial ecosystem
 - c) Land ecosystem
 - d) Vertebrates
- 7) Which of the following is not an intervention of environment biotechnology?
- a) Waste management
 - b) Pollution control
 - c) Antibiotic development**
 - d) Manufacturing process
- 8) Majority of the waste produced by commercial industries have better results when treated by _____
- a) Biological methods**
 - b) Chemical methods
 - c) Physical methods
 - d) Physio-chemical methods
- 9) What does biological method of waste treatment include?
- a) Inorganic compounds
 - b) Isolated bio-components**
 - c) Toxic compounds
 - d) Ethidium bromide
- 10) Which of the following require lower temperature and pressure?
- a) Biological method**
 - b) Physical method
 - c) Physio-chemical method
 - d) Chemical method
- 11) The lower energy requirements leads to _____
- a) Bio-magnification
 - b) Reduced cost**
 - c) Quorum quenching
 - d) Lyophilization

- 12) Bio-sensors have the capability to detect samples _____
- a) **Easily and accurately**
 - b) Is time consuming
 - c) Consume lots of energy
 - d) Carbon dioxide emission increases
- 13) Which of the following leads to release environmental nuisance?
- a) Oxygen
 - b) Hydrogen
 - c) Nitrogen
 - d) **Volatile compounds**
- 14) Which among the following is a competitive and sustainable alternative for environment?
- a) Bio-leaching
 - b) **Bio-remediation**
 - c) Bio-fortification
 - d) Immobilization
- 15) Which of the following is not a process of remediation?
- a) Vitrification
 - b) Thermal
 - c) **Bio-leaching**
 - d) Chemical
- 16) Soil remediation means cleaning up the _____
- a) Bacterial contaminants
 - b) **Residual effects of human activities**
 - c) Biological contaminants
 - d) Non-Biological contaminants
- 17) What does physical method of treatment of contaminated materials include?
- a) Microorganisms
 - b) **Concentration and excavation**
 - c) Toxic compounds
 - d) Ethidium bromide
- 18) Which of the following is the most reliable method of soil remediation?
- a) Bio-magnification

- b) **Bio-remediation**
 - c) Lyophilization
 - d) Chemical method
- 19) Which of the following decreases the risk of secondary contamination in the physical method of soil remediation?
- a) **Concentration**
 - b) Reduced cost
 - c) Quorum quenching
 - d) Lyophilization
- 20) Solidification is based on _____
- a) CO₂ release
 - b) Time consumption
 - c) Consume lots of energy
 - d) **Encapsulation**
- 21) In-situ based bio remediation involves introducing _____ to contaminated areas.
- a) Oxygen and nutrients
 - b) Carbon dioxide and methane
 - c) Nitrogen and CO₂
 - d) **CO and methane**
- 22) Which of the following major technique is not employed during in-situ bioremediation?
- a) Biosparging,
 - b) Bioventing
 - c) Injection recovery
 - d) **Bio-luminescence**
- 23) Which of the following technique is used to re-mediate contamination at the boundary level of water table?
- a) **Biosparging**
 - b) Bio-accumulation
 - c) Bio-degradation
 - d) Bio-magnification
- 24) The effect of a particular substance on an organism is used to determine which of the following property?
- a) **Toxicity**

- b) Metabolism
 - c) Gluconeogenesis
 - d) Glycogenesis
- 25) Effect of a substance on an organism is the transformation of a substance without any nutritional benefit is can be defined as which of the following?
- a) Co metabolism**
 - b) Metabolism
 - c) Glycogenesis
 - d) Gluconeogenesis
- 26) What does exposure mean with respect to dosage in plants?
- a) Concentration of toxicity**
 - b) Concentration of sugar
 - c) Concentration of potassium
 - d) Concentration of calcium
- 27) Which of the following is the pre-requisites for co-metabolic transformation?
- a) Coal
 - b) Oil
 - c) Natural gas
 - d) Co-factors**
- 28) Which of the following substrate is not used by methanotrophic or methane producing bacteria to oxidize methane?
- a) Methanol
 - b) Formaldehyde
 - c) Methane
 - d) Carbon dioxide**
- 29) Which of the following factors doesn't influence the rate of degradation by bacteria?
- a) Microbial density
 - b) Microbial diversity
 - c) Association
 - d) Color**
- 30) Which of the following needs archaea to degrade a contaminant?
- a) Bio augmentation**

- b) Accumulation
- c) Sterilization
- d) Pasteurization

- **Answer in one sentence:**

- 1) Define Environmental biotechnology.
- 2) Write any two scope of environmental biotechnology.
- 3) Define composting.
- 4) What is bioremediation?
- 5) What is phytoremediation?
- 6) Define biomethanation.
- 7) What is bioleaching?
- 8) Write any two objectives of environmental biotechnology.
- 9) Define combustion of biomass.
- 10) Define biofuels.
- 11) Define biomass gasification.
- 12) Write a long form of GMO.
- 13) Define risk assessment management.
- 14) Define biofuel.
- 15) Define biosafety regulation

- **Short Note:**

- 1) Environmental biotechnology
- 2) Vermicomposting
- 3) GMO's in the environment
- 4) Bioremediation
- 5) Phytoremediation
- 6) Biomethanation
- 7) Biomass
- 8) Risk assessment management
- 9) Biosafety regulation
- 10) Application of biotechnology

- **Short Answer Question:**

- 1) Define bioaugmentation.

- 2) Explain biofuels
 - 3) Define vermicomposting? What are the different methods of composting?
 - 4) Write details on bioaugmentation.
 - 5) Discuss the biodegradation of chlorinated hydrocarbons.
 - 6) Describe the mechanism of bioleaching.
 - 7) Write detailed note on ex-situ bioremediation methods.
 - 8) Write a note history of environmental biotechnology.
 - 9) Write a note on chemical characteristics of vermicompost.
 - 10) Write a note on principles for GMO's.
 - 11) Explain earthworm life cycle.
 - 12) Write merits of biomethanation.
 - 13) Explain biogas.
 - 14) Write a note on importance of risk assesement management.
- **Long Answer Question:**
 - 1) Distinguish between mutualism and Parasitism?
 - 2) Discuss about the biogeochemical role of soil microorganisms?
 - 3) Explain about pesticide degradation pattern and how the petroleum products are degraded?
 - 4) Laboratory information system and its role in biosafety.
 - 5) Bioremediation and its role in soil improvement and waste monitoring-discuss.
 - 6) Explain the role of biopesticides in integrated pest management.
 - 7) Write a note on commercial development of bioremediation industry.
 - 8) What is bioremediation? Explain in detail about in situ and ex situ bioremediation.
 - 9) Define and differentiate between insitu and exsitu bioremediation techniques.
 - 10) What is meant by phytoremediation? Explain different types of phytoremediation techniques.
 - 11) What is meant by environmental biotechnology? Write note on the scope of environmental biotechnology
 - 12) Write need and importance of risk assessment management.