

## **ENVIRONMENTAL STUDIES (CV307)**

### **MODULE 2: WATER TREATMENT & WASTE MANAGEMENT**

1. Biochemical Oxygen Demand (BOD) measures:

- a) Heavy metal content
- b) Organic pollutant degradation
- c) Water acidity
- d) Salinity levels

Answer: b

2. Primary wastewater treatment removes:

- a) Dissolved organics
- b) Suspended solids
- c) Pathogens
- d) Nutrients

Answer: b

3. Rainwater harvesting primarily recharges:

- a) Oceans
- b) Groundwater
- c) Glaciers
- d) Atmosphere

Answer: b

4. Which is a hazardous waste?

- a) Food scraps
- b) Hospital needles
- c) Paper waste
- d) Yard trimmings

Answer: b

5. Sanitary landfills require:

- a) Open dumping
- b) Liner systems
- c) Ocean dumping
- d) Incineration

Answer: b

6. E-waste contains toxic:

- a) Cellulose
- b) Lead and mercury
- c) Proteins
- d) Calcium

Answer: b

7. Reverse osmosis is used for:

- a) Solid waste compaction
- b) Water desalination
- c) Plastic recycling
- d) Compost production

Answer: b

8. Composting treats:

- a) Electronic waste
- b) Organic/biodegradable waste
- c) Radioactive waste
- d) Metal scraps

Answer: b

9. Leachate in landfills is:

- a) Decomposed gas
- b) Contaminated liquid
- c) Solid residue
- d) Cover material

Answer: b

10. Tertiary wastewater treatment removes:

- a) Large debris
- b) Nutrients (N/P)
- c) Suspended solids
- d) Oil/grease

Answer: b

11. Which waste requires secured landfill disposal?

- a) Municipal solid waste
- b) Biomedical waste
- c) Food waste
- d) Recyclable plastic

Answer: b

12. The main purpose of grit chambers is to remove:

- a) Pathogens
- b) Sand and gravel
- c) Organic matter
- d) Heavy metals

Answer: b

13. Which is NOT a waterborne disease?

- a) Cholera
- b) Asthma
- c) Typhoid
- d) Dysentery

Answer: b

14. Aerobic digestion in wastewater treatment requires:

- a) Absence of oxygen
- b) Presence of oxygen
- c) High salinity
- d) Low temperature

Answer: b

15. The "blue baby syndrome" is caused by:

- a) Fluoride
- b) Nitrates
- c) Arsenic
- d) Mercury

Answer: b

16. Which waste category includes discarded computers?

- a) Biomedical waste
- b) E-waste
- c) Municipal solid waste
- d) Green waste

Answer: b

17. Trickling filters are used in:

- a) Primary treatment
- b) Secondary biological treatment
- c) Sludge digestion
- d) Disinfection

Answer: b

18. Landfill gas primarily contains:

- a) Oxygen
- b) Methane
- c) Hydrogen sulfide
- d) Radon

Answer: b

19. Pyrolysis is a process for treating:

- a) Liquid effluents
- b) Plastic waste
- c) Radioactive waste
- d) Food waste

Answer: b

20. Which process uses microorganisms to treat wastewater?

- a) Sedimentation
- b) Activated sludge
- c) Screening
- d) Chlorination

Answer: b

21. Characteristics of industrial wastewater include:

- a) Low BOD
- b) Variable chemical composition
- c) Zero toxicity
- d) High dissolved oxygen

Answer: b

22. The main goal of 3R principles is:

- a) Increase waste generation
- b) Reduce, Reuse, Recycle
- c) Expand landfills
- d) Promote incineration

Answer: b

23. Which is NOT a method for solid waste management?

- a) Landfilling
- b) Atmospheric release
- c) Composting
- d) Incineration

Answer: b

24. Pathogen destruction in wastewater occurs during:

- a) Screening
- b) Disinfection
- c) Grit removal
- d) Sedimentation

Answer: b

25. Which parameter indicates fecal contamination?

- a) pH
- b) Coliform count
- c) Turbidity
- d) Hardness

Answer: b

26. The primary function of aeration in water treatment is to:

- a) Remove suspended solids
- b) Oxidize iron/manganese and remove gases
- c) Eliminate pathogens
- d) Adjust pH

Answer: b

27. COD (Chemical Oxygen Demand) measures:

- a) Biological activity
- b) Total oxidizable pollutants
- c) Heavy metal toxicity
- d) Water hardness

Answer: b

28. Secure landfills are essential for disposal of:

- a) Organic kitchen waste
- b) Biomedical and hazardous waste
- c) Recyclable plastics
- d) Construction debris

Answer: b

29. The activated sludge process occurs during:

- a) Preliminary treatment
- b) Secondary biological treatment
- c) Tertiary filtration
- d) Disinfection

Answer: b

30. Which method is inappropriate for e-waste management?

- a) Component recycling
- b) Uncontrolled incineration
- c) Metal recovery
- d) Formal dismantling

Answer: b

31. Rainwater harvesting primarily addresses:

- a) Air pollution reduction
- b) Groundwater recharge
- c) Industrial cooling
- d) Soil erosion control

Answer: b

32. The main purpose of grit chambers in WWTPs is to remove:

- a) Organic matter
- b) Sand and heavy particles
- c) Pathogens
- d) Dissolved nutrients

Answer: b

33. Biochemical Oxygen Demand (BOD) indicates:

- a) Total dissolved solids
- b) Organic pollution level
- c) Heavy metal concentration
- d) Radioactivity

Answer: b

34. Pyrolysis is particularly suitable for treating:

- a) Liquid effluents
- b) Plastic waste
- c) Radioactive materials

d) Food waste

Answer: b

35. Blue baby syndrome is caused by:

- a) Fluoride contamination
- b) Nitrate pollution
- c) Arsenic in water
- d) Mercury exposure

Answer: b

36. Trickling filters are used for:

- a) Primary sedimentation
- b) Secondary biological treatment
- c) Tertiary disinfection
- d) Sludge digestion

Answer: b

37. Landfill gas primarily consists of:

- a) Oxygen and nitrogen
- b) Methane and CO<sub>2</sub>
- c) Hydrogen sulfide
- d) Radon

Answer: b

38. The 3R principle in waste management stands for:

- a) Reduce, Regulate, Recover
- b) Reduce, Reuse, Recycle
- c) Recover, Recycle, Regulate
- d) Reduce, Recover, Regulate

Answer: b

39. Coliform count in water indicates:

- a) Mineral content
- b) Fecal contamination
- c) Radioactivity
- d) Acidity level

Answer: b

40. Aerobic wastewater treatment requires:

- a) Absence of oxygen
- b) Presence of oxygen
- c) High salinity
- d) Low temperatures

Answer: b

41. Reverse osmosis is particularly effective for:

- a) Solid waste compaction
- b) Desalination

- c) Plastic recycling
- d) Compost production

Answer: b

42. Composting is unsuitable for:

- a) Food scraps
- b) Electronic components
- c) Yard waste
- d) Agricultural residues

Answer: b

43. Leachate collection systems in landfills prevent:

- a) Gas emissions
- b) Groundwater contamination
- c) Odor dispersion
- d) Soil erosion

Answer: b

44. Which parameter indicates water turbidity?

- a) pH
- b) Suspended solids
- c) BOD
- d) COD

Answer: b

45. Chlorination in water treatment primarily addresses:

- a) Hardness reduction
- b) Pathogen destruction
- c) Nutrient removal
- d) Heavy metal precipitation

Answer: b

46. Constructed wetlands are used for:

- a) Solid waste incineration
- b) Wastewater treatment
- c) E-waste recycling
- d) Nuclear waste disposal

Answer: b

47. The main environmental risk of uncontrolled landfills is:

- a) Noise pollution
- b) Groundwater contamination
- c) Air quality improvement
- d) Enhanced soil fertility

Answer: b

48. Which waste requires autoclaving before disposal?

- a) Paper waste

- b) Biomedical waste
- c) Plastic packaging
- d) Food waste

Answer: b

49. Sludge digestion in WWTPs produces:

- a) Potable water
- b) Methane-rich biogas
- c) Solid fertilizers
- d) Recycled plastic

Answer: b

50. The primary goal of tertiary wastewater treatment is:

- a) Solids removal
- b) Nutrient removal (N/P)
- c) Pathogen destruction
- d) Odor control

Answer: b