

CBCS SCHEME



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Question Paper Version : D

Fourth Semester B.E. Degree Examination, June/July 2024 Electronic Waste Management - Issues and Challenges

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

1. Which of the following substances used in electronics is classified as a persistent organic pollutant (POP)?
 - a) Nickel
 - b) Tin
 - c) Silver
 - d) Polybrominated diphenyl Ethers (PBDEs)
2. Informal e-waste recycling in developing countries often involves which hazardous practices?
 - a) Composting
 - b) Incineration without emission controls
 - c) Anaerobic digestion
 - d) Cryogenic grinding
3. Which is the primary hazards for workers in informal e-waste recycling sectors?
 - a) Noise induced hearing loss
 - b) Respiratory illnesses
 - c) Ergonomic injuries
 - d) Cardio vascular diseases
4. Which environmental process can spread toxic substances from e-waste to a wider area?
 - a) Photosynthesis
 - b) Biomagnification
 - c) Eutrophication
 - d) Dentrification

5. Extended producer responsibility [EPR] is a policy approach that :
 - a) Encourages consumers to recycle more
 - b) Requires manufacturers to take back and recycle their products
 - c) Mandates governmental control over e-waste
 - d) Limits the use of hazardous materials in products
6. What health effect is linked to exposure to phthalates in e-waste?
 - a) Bone fractures
 - b) Endocrine disruption
 - c) Increased appetite
 - d) Improved lung function
7. The term 'urban mining' in the context of e-waste refers to :
 - a) Extracting minerals from urban landfills
 - b) Recovering valuable metals from e-waste
 - c) Mining operations within city boundaries
 - d) Collecting e-waste from urban households
8. Which of the following is not a recommended practice for reducing e-waste?
 - a) Prolonging the lifespan of electronic devices
 - b) Encouraging the use of refurbished electronics
 - c) Promoting single-use electronic products
 - d) Implementing a take-back program
9. What is a significant challenge in the recycling of lithium-ion batteries from e-waste?
 - a) High cost of transportation
 - b) Lack of valuable metals
 - c) Risk of fire and explosion
 - d) Absence of recycling facilities
10. What is the primary environmental benefit of refurbishing electronic devices instead of recycling them?
 - a) Reducing energy consumption
 - b) Decreasing green house gas emissions
 - c) Conserving raw materials
 - d) Lowering waste generation
11. Which international treaty regulates the transboundary movements of hazardous wastes, including e-waste?
 - a) Kyoto protocol
 - b) Basel convention
 - c) Montreal protocol
 - d) Stockholm convention
12. Which US legislation is primarily responsible for regulating the disposal of hazardous waste, including e-waste?
 - a) Clean Air Act
 - b) Resource Conservation and Recovery Act (RCRA)
 - c) Toxic Substances Control Act
 - d) Safe Drinking Water Act.

13. The RoHS directive in the European Union restricts the use of certain hazardous substances in Electrical and electronics equipment. What does RoHS stand for?
 - a) Restriction of Hazardous Substances
 - b) Regulation of Harmful Substances
 - c) Recycling of Hazardous Substances
 - d) Reduction of Harmful Substances
14. What is the primary focus of European green deal in relation to e-waste?
 - a) Increase production of electronic devices
 - b) Improve energy efficiency in electronics
 - c) Promote recycling and sustainable product design
 - d) Restrict import of foreign electronics
15. In Canada, which federal regulation addresses the management of electronic waste?
 - a) Canadian Environmental Protection Act (CEPA)
 - b) Waste Electrical and Electronic Equipment (WEEE) Regulations
 - c) National Electronics recycling Act
 - d) Hazardous Waste Act
16. Which Indian regulation specifically addresses the management and handling of e-waste?
 - a) The Environmental Protection Act, 1986
 - b) The Hazardous Waste Management Rules 2008
 - c) The E-waste (Management) rules, 2016
 - d) The Water (Prevention and control of pollution) Act, 1974
17. Under the E-waste (management) Rules, 2016, who is responsible for ensuring the collection and proper disposal of E-waste?
 - a) State Governments
 - b) Consumers
 - c) Producers
 - d) Local municipalities
18. What is the role of Central Pollution Control Board (CPCB) in e-waste management in India?
 - a) To collect and recycle e-waste
 - b) To monitor and enforce compliance with e-waste regulations
 - c) To import e-waste for recycling
 - d) To promote the sale of new electronic products
19. According to the E-waste (management) Rules, 2016, what is the minimum collection target for producers based on the weight of their products sold in the market during previous year?
 - a) 30%
 - b) 50%
 - c) 70%
 - d) 100%
20. The national Green Tribunal (NGT) plays a crucial role in e-waste management in India. What is its primary function.
 - a) To draft e-waste management laws
 - b) To adjudicate environmental disputes and enforce legal rights
 - c) To collect e-waste from consumers
 - d) To recycle e-waste.
21. Which country is the largest producer of e-waste per capita as of 2021
 - a) United states
 - b) China
 - c) Norway
 - d) Japan

22. What percentage of global e-waste was documented as properly collected and recycled in 2019
a) 17.4% b) 35.2% c) 45.6% d) 52.1%
23. Which of the following materials in e-waste is most challenging to recycle?
a) Glass b) Plastic c) Metal d) Rubber
24. What is the main advantage of using hydrometallurgical processes over pyrometallurgical processes in e-waste recycling?
a) Lower energy consumption
b) Higher metal recovery rates
c) Lower operational costs
d) Simpler technology
25. Which of the following is a key challenge in the e-waste recycling process?
a) High availability of raw materials
b) Complexity of product design
c) Abundance of recycling facilities
d) Low economic value of materials
26. What is the main environmental risk associated with improper e-waste disposal?
a) Soil Erosion
b) Air pollution
c) Water Contamination
d) Ozone depletion
27. Which of the following techniques is used to extract precious metals from e-waste?
a) Mechanical shredding
b) Pyrometallurgy
c) Bioremediation
d) Solvent extraction
28. Which method involves living organisms to recover metals from e-waste?
a) Hydrometallurgy
b) Electrometallurgy
c) Phytomining
d) Biometallurgy
29. What is the primary purpose of e-waste collection events?
a) To educate the public on electronic waste
b) To collect data on e-waste generation
c) To provide a convenient way for consumers to dispose off-waste
d) To promote new electronic products
30. Which of the following materials is typically recovered from e-waste through hydrometallurgical processes?
a) Silicon b) Copper c) Plastic d) Glass
31. Which of the following is NOT a major category of e-waste based on its source?
a) Household Appliances b) Industrial Equipment
c) Office equipment d) Medical Waste

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45. What is a good way to dispose off e-waste?
a) Throw it in the street
b) Throw it in a dump
c) Burn it in your back yard
d) Give it to a reliable e-waste recycling company
46. What is the iron and steel constituting of e-waste?
a) 20 b) 30 c) 40 d) 50
47. Which of the following elements make e-waste hazardous in nature?
a) Lead b) Glass c) Plastic d) Iron
48. Which environmental issue is exacerbated by improper disposal of e-waste?
a) Deforestation
b) Acid rain
c) Green house gas emissions
d) Ocean acidification
49. E-waste is a significant source of which type of pollution?
a) Thermal pollution
b) Light pollution
c) Noise pollution
d) Chemical pollution
50. What is the term used for describing the practice of reuse and refurbishing e-waste components?
a) Upcycling b) Refactoring
c) Regeneration d) Retrofitting
