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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

An Autonomous Institution Affiliated to Visvesvaraya Technological University (VTU) Belagavi

24CV47C

USN: | | | | | | | | | | |

Fourth Semester B.E. Degree Examination, MAY 2026

Electronic Waste Management - Issues and Challenge

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 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.

Question Paper Version - A

SECTION - A: Answer Following Questions. 50 M	
Q.N.	**Questions**
1	Which country is one of the world's biggest digital dumping grounds? **A)** Brazil **B)** Ghana **C)** Kenya **D)** Mexico
2	What country produces the most e-waste? **A)** Iraq **B)** United States **C)** Canada **D)** China
3	What is one of the main causes of e-waste? **A)** Global Warming **B)** Pollution **C)** Population Growth **D)** All of the above
4	What is the Good way to dispose e-waste **A)** Throw it in the street **B)** Throw it in a dump **C)** Burn it in your backyard **D)** Give it to a reliable e-waste recycling company
5	What does E-Waste Management primarily involve? **A)** Burning waste **B)** Disposal in landfills only **C)** Collection, recycling, and safe disposal **D)** Ignoring waste
6	Which hazardous material is commonly found in e-waste? **A)** Oxygen **B)** Lead **C)** Nitrogen **D)** Hydrogen
7	Improper disposal of e-waste can lead to: **A)** Soil fertility improvement **B)** Increase in biodiversity **C)** Cleaner air **D)** Environmental pollution
8	Which of the following is a major environmental impact of e-waste? **A)** Air purification **B)** Water contamination **C)** Soil enrichment **D)** Reduced pollution

9	What is the main objective of e-waste recycling? **A)** Increase waste volume **B)** Destroy electronics **C)** Recover valuable materials **D)** Burn waste
10	Which sector produces the highest amount of e-waste? **A)** Agriculture **B)** Electronics and IT sector **C)** Textile industry **D)** Food industry
11	Which of the following contributes the largest share to global e-waste generation? **A)** Large household appliances **B)** Small IT devices **C)** Medical equipment **D)** Lighting equipment
12	What is the primary reason for the rapid increase in e-waste generation? **A)** Increased recycling efficiency **B)** Reduced consumption of electronics **C)** Short product life cycles and technological advancements **D)** Government restrictions
13	Printed Circuit Boards (PCBs) primarily contain: **A)** Only plastic materials **B)** Valuable metals and hazardous substances **C)** Only biodegradable materials **D)** Only glass components
14	Which of the following is classified under 'small equipment' in e-waste categories? **A)** Refrigerator **B)** Air conditioner **C)** Washing machine **D)** Vacuum cleaner
15	Cathode Ray Tubes (CRT) used in older televisions contain: **A)** Mercury **B)** Leaded glass **C)** Cadmium only **D)** Arsenic
16	Which of the following e-waste types has the highest concentration of copper? **A)** Glass screens **B)** Plastic casings **C)** Power cables and wiring **D)** Batteries
17	In e-waste composition, plastics approximately account for: **A)** 20–30% **B)** 10–20% **C)** More than 50% **D)** Less than 5%
18	Which hazardous element is commonly found in rechargeable batteries in e-waste? **A)** Sodium **B)** Calcium **C)** Lithium **D)** Iron
19	Large household appliances in e-waste include all EXCEPT: **A)** Dishwasher **B)** Refrigerator **C)** Laptop **D)** Microwave oven
20	A country reports rapid growth in e-waste despite stable population. The most probable reason is: **A)** Increased per capita electronic consumption and reduced lifespan **B)** Reduced recycling efficiency **C)** Decrease in imports of electronics **D)** Improved waste segregation
21	Which toxic metal in e-waste primarily affects the nervous system? **A)** Iron **B)** Lead **C)** Zinc **D)** Aluminum
22	Mercury exposure from e-waste mainly damages: **A)** Liver only **B)** Skin **C)** Brain and kidneys **D)** Bones

37	Extended Producer Responsibility (EPR) primarily aims to: **A)** Encourage informal sectorMake producers responsible for end-of-life management **B)** Make producers responsible for end-of-life management Increase landfill use **C)** Reduce recycling **D)** Make producers responsible for end-of-life management
38	Which disposal method is considered the least preferred in sustainable e-waste management hierarchy **A)** Recycling **B)** Reuse **C)** Landfilling **D)** Refurbishment
39	In collection logistics, which factor MOST influences efficiency? **A)** Transportation network and aggregation points **B)** Weather conditions only **C)** Device size **D)** Color of bins
40	If e-waste is directly shredded without prior dismantling, the major issue is: **A)** Increased recovery efficiency **B)** Improved safety **C)** Loss of valuable components and contamination **D)** Reduced processing time only
41	Informal recycling methods are inefficient because they: **A)** Use advanced technology **B)** Focus only on high-value materials and ignore others **C)** Recover all materials completely **D)** Are fully regulated
42	The latest comprehensive regulation governing e-waste management in India is: **A)** E-Waste Rules, 2011 **B)** Environment Protection Act, 1986 **C)** E-Waste (Management) Rules, 2016 **D)** E-Waste (Management) Rules, 2022
43	Which authority is responsible for implementing e-waste rules at the national level? **A)** Municipal Corporation **B)** NITI Aayog **C)** Central Pollution Control Board **D)** State Electricity Board
44	The concept of EPR was introduced in India's e-waste framework to: **A)** Eliminate recycling **B)** Reduce import of electronics **C)** Shift waste management burden to producers **D)** Promote landfilling
45	Under the E-Waste (Management) Rules, 2022, Extended Producer Responsibility (EPR) primarily mandates: **A)** Consumer responsibility **B)** Producer responsibility for end-of-life products **C)** Government-only responsibility **D)** Recycler responsibility only
46	Which of the following stakeholders must obtain authorization under e-waste rules? **A)** Producers only **B)** Consumers only **C)** Recyclers only **D)** Producers, dismantlers, and recyclers
47	Under Indian regulations, bulk consumers are required to: **A)** Channel e-waste to authorized recyclers **B)** Dispose e-waste in open dumps **C)** Export e-waste freely **D)** Burn e-waste
48	A company fails to meet its EPR targets. The most likely regulatory consequence is: **A)** Increased production quota **B)** Reward incentives **C)** Environmental compensation/penalty **D)** Tax exemption
49	The Environment (Protection) Act, 1986 provides: **A)** Only financial policies **B)** Umbrella framework for environmental regulations including e-waste **C)** Only air pollution control **D)** Only water pollution control

23	Open burning of e-waste releases which highly toxic compounds?	
	A) Methane	**B)** Dioxins and furans
	C) Oxygen	**D)** Nitrogen
24	Which pathway is most responsible for groundwater contamination from e-waste?	
	A) Evaporation	**B)** Photosynthesis
	C) Leaching of heavy metals from landfills	**D)** Filtration
25	Cadmium exposure is primarily associated with damage to:	
	A) Lungs and kidneys	**B)** Heart only
	C) Eyes	**D)** Muscles
26	Which component of e-waste is a major source of brominated flame retardants (BFRs)?	
	A) Glass panels	**B)** Metal frames
	C) Plastic casings	**D)** Rubber wires
27	Informal recycling practices such as acid leaching mainly result in:	
	A) Soil enrichment	**B)** Water and soil pollution
	C) Reduced toxicity	**D)** Improved air quality
28	Which gas released during improper e-waste burning contributes to cancer risk?	
	A) Oxygen	**B)** Hydrogen
	C) Carbon monoxide	**D)** Dioxins
29	Long-term exposure to e-waste toxins can lead to:	
	A) Neurological disorders	**B)** Improved immunity
	C) Increased metabolism	**D)** Better lung capacity
30	Which group is most vulnerable to e-waste health hazards?	
	A) Office workers	**B)** Informal recycling workers and children
	C) Athletes	**D)** Teachers
31	Which collection method ensures the highest traceability and regulatory compliance in e-waste management?	
	A) Informal door-to-door collection	**B)** Bulk consumer take-back system
	C) Open dumping	**D)** Scavenging
32	In an efficient e-waste management system, the first technical step after collection is:	
	A) Chemical leaching	**B)** Manual dismantling and segregation
	C) Landfilling	**D)** Incineration
33	Which recycling technique is MOST suitable for recovering precious metals from PCBs?	
	A) Composting	**B)** Landfilling
	C) Mechanical shredding only	**D)** Hydrometallurgical process
34	In mechanical recycling, size reduction is primarily achieved through:	
	A) Incineration	**B)** Electrolysis
	C) Shredding and crushing	**D)** Chemical leaching
35	Which process uses high temperatures to extract metals from e-waste?	
	A) Hydrometallurgy	**B)** Pyrometallurgy
	C) Bioremediation	**D)** Filtration
36	Which method is environmentally safer for metal recovery but requires longer processing time?	
	A) Hydrometallurgy	**B)** Pyrometallurgy
	C) Open burning	**D)** Landfilling

50	The digital EPR portal introduced under recent rules aims to: **A)** Promote manual records **B)** Eliminate reporting **C)** Track e-waste generation and recycling targets electronically **D)** Increase informal sector role