

<b>NMAM INSTITUTE OF TECHNOLOGY, NITTE</b>
<b>Off-Campus Centre of Nitte (Deemed to be University)</b>
<b>Second Semester B.Tech (CBCS) Degree Examinations</b>
<b>CY1003-1-MATERIALS CHEMISTRY FOR COMPUTER SYSTEMS</b>

### MULTIPLE CHOICE QUESTIONS: UNIT – III

#### E-waste management & Green fuels

1.	<b>Which of the following is NOT a source of e-waste?</b>			
	A)	Plastic bottles	B)	Printer
	C)	Fluorescent lamps	D)	Laptops
Ans	<b>A) Plastic bottles</b>			
2.	<b>Choose the incorrect statement.</b>			
	A)	e-waste refers to electronic wastes.	B)	e-waste comprises of only toxic substances.
	C)	It is possible to extract gold from e-waste.	D)	e-waste can cause soil pollution.
Ans	<b>B) e-waste comprises of only toxic substances.</b>			
3.	<b>Recycling of e-waste has a direct impact on .....</b>			
	A)	Environment	B)	Economy
	C)	Both environment and economy	D)	Neither environment nor economy
Ans	<b>C) Both environment and economy</b>			
4.	<b>Which of the following is an example of halogenated compound found in e-waste?</b>			
	A)	Cd	B)	Toner dust
	C)	CRT	D)	CFC
Ans	<b>D) CFC</b>			
5.	<b>What is the ill-effect of CFC emission?</b>			
	A)	It causes lung cancer.	B)	It results in cardiac failure.
	C)	It obscures vision.	D)	It accumulates in stratosphere and depletes ozone.
Ans	<b>D) It accumulates in stratosphere and depletes ozone.</b>			
6.	<b>The metal ions released from e-waste can prove hazardous to human health due to their .....</b>			
	A)	easy bioaccumulation	B)	inert nature
	C)	tendency to undergo reduction	D)	optical nature
Ans	<b>A) easy bioaccumulation</b>			
7.	<b>Which is the first step of e-waste recycling?</b>			
	A)	Chemical	B)	Physical
	C)	Biological	D)	Thermal
Ans	<b>B) Physical</b>			
8.	<b>Arrange the following processes in the correct sequence.</b>			
	<b>(i) Separation of metals</b>			
	<b>(ii) Manual dismantling of waste components</b>			
	<b>(iii) Mechanical shredding of the individual components</b>			
	A)	(i), (ii) & (iii)	B)	(ii), (iii) & (i)
	C)	(iii), (i) & (ii)	D)	(ii), (i) & (iii)
Ans	<b>B) (ii), (iii) &amp; (i)</b>			
9.	<b>Which of the following is not a type of thermal treatment method?</b>			
	A)	Combustion	B)	Sintering
	C)	Extraction	D)	Incineration
Ans	<b>C) Extraction</b>			
10.	<b>Which of the following method is carried out in the absence of oxygen?</b>			

	A) Pyrolysis	B) Gasification
	C) Combustion	D) Incineration
<b>Ans</b>	<b>A) Pyrolysis</b>	
11.	<b>What is the disadvantage of thermal treatment?</b>	
	A) It is a simple and cheaper method of waste disposal.	B) It releases large amount of carcinogens in the atmosphere.
	C) It helps in quick reduction in waste volume.	D) It is easily adaptable.
<b>Ans</b>	<b>B) It releases large amount of carcinogens in the atmosphere.</b>	
12.	<b>Which are the two stages of hydrometallurgy?</b>	
	A) Leaching and electrodeposition	B) Electrodeposition and recover
	C) Leaching and recovery	D) Extraction and leaching
<b>Ans</b>	<b>C) Leaching and recovery</b>	
13.	<b>Which of the following method is NOT a part of pyrometallurgical treatment of e-wastes?</b>	
	A) Smelting	B) Incineration
	C) Pyrolysis	D) Filtration
<b>Ans</b>	<b>D) Filtration</b>	
14.	<b>Identify the INCORRECT statement.</b>	
	A) Pyrometallurgy involves high temperature treatment	B) Combustion is reduction at room temperature.
	C) Leaching involves conversion of metals into soluble salts or complexes	D) Pyrolysis is undertaken in the absence of oxygen
<b>Ans</b>	<b>B) Combustion is reduction at room temperature</b>	
15.	<b>Extraction of metals by treatment with HCl is called as ..... leaching.</b>	
	A) Cyanide	B) thioruea
	C) acid	D) thiosulphate
<b>Ans</b>	<b>C) Acid</b>	
16.	<b>Which of the following method is not suitable for gold extraction?</b>	
	A) Cyanide leaching	B) Metal leaching
	C) Halide leaching	D) Thiosulphate leaching
<b>Ans</b>	<b>B) Metal leaching</b>	
17.	<b>During thiourea leaching, ..... reaction takes place between the metal ion and thiourea.</b>	
	A) Repulsion	B) Neutralization
	C) Substitution	D) Complexation
<b>Ans</b>	<b>D) Complexation</b>	
18.	<b>..... Is a metal recovery process consisting of transfer of metal ion from inorganic to organic phase.</b>	
	A) Solvent Extraction	B) Adsorption
	C) Ion exchange	D) Electrodeposition
<b>Ans</b>	<b>A) Solvent Extraction</b>	
19.	<b>Which of the following statement is NOT true for ion exchange process?</b>	
	A) It is an extension of solvent extraction method.	B) The exchange reaction occurs on the surface of polymer beads.
	C) The method is not selective.	D) It is an environment-friendly method.
<b>Ans</b>	<b>C) The method is not selective.</b>	
20.	<b>Utilization of activated charcoal is effective for ..... process.</b>	
	A) solvent Extraction	B) adsorption
	C) ion exchange	D) electrodeposition
<b>Ans</b>	<b>B) Adsorption</b>	
21.	<b>Chose the correct statement.</b>	
	A) Metal recovered by electrodeposition method is of high purity.	B) During ion exchange, the metal ions bind to the polymeric functional groups by hydrogen bonding.
	C) Solvent extraction is a three phase system.	D) Activated charcoal has the least tendency to behave as metal adsorbent.
<b>Ans</b>	<b>A) Metal recovered by electrodeposition method is of high purity.</b>	

22.	..... metal is taken as cathode during gold recovery by electro-deposition.			
	A)	Pt	B)	Cu
	C)	Au	D)	C
Ans	C)	Au		
23.	CPCB and SPCB are part of .....			
	A)	Producers	B)	Consumers
	C)	Recyclers	D)	Statutory government regulatory bodies
Ans	D)	Statutory government regulatory bodies		
24.	Which of the following is not the responsibility of a recycler?			
	A)	Collection of e-waste	B)	Registering themselves with SPCB
	C)	Payment of green tax	D)	Following the standard norms of recycling
Ans	C)	Payment of green tax		
25.	Who frames the guidelines for e-waste disposal and recycling?			
	A)	CPCB	B)	Producers
	C)	Consumers	D)	Recyclers
Ans	A)	CPCB		
26.	Splitting of water into hydrogen and oxygen using energy is called .....			
	A)	Fission	B)	Fusion
	C)	Electrolysis	D)	Photosynthesis
Ans	C)	Electrolysis		
27	Photovoltaic cells convert ..... energy to ..... energy.			
	A)	Chemical; Electrical	B)	Electrical; Chemical
	C)	Solar; Electrical	D)	Electrical; Solar
Ans	C)	Solar; Electrical		
28	Identify the INCORRECT statement.			
	A)	Hydrogen energy is a clean energy.	B)	Hydrogen can be generated in electrolyzer.
	C)	During water electrolysis, hydrogen is liberated at the anode.	D)	Hydrogen gas is highly flammable and explosive.
Ans	C)	During water electrolysis, hydrogen is liberated at the anode.		
29.	The thermal decomposition of e-waste at high temperature in an oxygen-free environment is called .....			
	A)	Smelting	B)	Combustion
	C)	Pyrolysis	D)	Incineration
Ans	C)	Pyrolysis		
30.	In which process are the electronic components harvested from e-waste without breaking them into smaller components?			
	A)	Hydrometallurgy	B)	Direct recycling
	C)	Pyrometallurgy	D)	Electrolysis
Ans	B)	Direct recycling		

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