

Uka Tarsadia University (Diwaliba Polytechnic)
Diploma in Environmental Engineering
Objective Type Questions (Industrial Water Pollution)

CHAPTER -1 INTRODUCTION TO DISPOSAL METHODS

1	Drinking water standard given by ISO _____ -			
	A.	10500	B.	105001
	C.	10503	D.	105004

2	Which is the disposing of treated water application?			
	A.	Surface water discharge	B.	Subsurface discharge
	C.	Land application for beneficial use	D.	All of the above

3	PH value for drinking water standard is			
	A.	5-6	B.	6.5-8.5
	C.	7-8	D.	7.7-8.9

4	The full form of NPDES is _____			
	A.	National pollutant discharge elimination system	B.	National pollution discharge elimination system
	C.	A&B	D.	None of the above

5	Total hardness desirable limit for drinking water standard is _____mg/l			
	A.	200	B.	400
	C.	300	D.	250

6	As per NPDES which treatment is required for disposal waste water .			
	A.	Pre treatment	B.	Primary treatment
	C.	Secondary treatment	D.	All of the above

7	Dissolved solids desirable limit for drinking water standard is _____mg/l			
	A.	200	B.	300
	C.	400	D.	500
8	The full form of EPA is _____			
	A.	Environmental program agency	B.	Environmental protection agency
	C.	Environmental policy agency	D.	None of the above
9	Turbidity desirable limit for drinking water standard is _____ NTU			
	A.	2	B.	3
	C.	5	D.	6

10	The world's available fresh water supply is about _____ percent of that total water supply.			
	A.	10	B.	4
	C.	3	D.	7

11	Chloride concentration desirable limit for drinking water standard is _____mg/l			
	A.	250	B.	350
	C.	450	D.	500

12	Organic matter + nutrients + O ₂ → CO ₂ + H ₂ O + _____			
	A.	Biomass	B.	O ₂
	C.	Nutrients	D.	Organic matter

13	Calcium desirable limit for drinking water standard is _____ mg/l			
	A.	75	B.	85
	C.	95	D.	100

14	Which of the following conditions is not suitable for the disposal of excreta or sewage?			
	A.	The waste does not pollute the ground surface	B.	It is not exposed to the atmosphere
	C.	It should be accessible for children	D.	It does not give odour nuisance

15	Manganese desirable limit for drinking water standard is _____ mg/l			
	A.	0.1	B.	0.01
	C.	0.001	D.	Absent

16	In water treatment which factor which has a major control over reaction selectivity and product distribution?			
	A.	pH	B.	temperature
	C.	pressure	D.	ionic concentration

17	Nitrate desirable limit for drinking water standard is _____ mg/l			
	A.	30	B.	40
	C.	50	D.	100
18	_____ means that a substance can be converted into simpler compounds by biologically mediated reactions.			
	A.	Non-biodegradable	B.	Biodegradable
	C.	Dilution	D.	Assimilation
19	Mercury desirable limit for drinking water standard is _____ mg/l			
	A.	0.1	B.	0.001
	C.	0.001	D.	Absent
20	_____ in water is consumed during aerobic biodegradation of organic compounds.			
	A.	Oxygen	B.	Carbon dioxide
	C.	Methane	D.	None of the above
21	Lead desirable limit for drinking water standard is _____ mg/l			
	A.	0.05	B.	0.005
	C.	0.1	D.	0.001
22	The rate at which oxygen is dissolved into the water from the atmosphere is proportional to the deficit of oxygen in the water			
	A.	True	B.	False
23	Zinc desirable limit for drinking water standard is _____ mg/l			
	A.	5	B.	10
	C.	15	D.	20
24	When the deoxygenation rate exceeds the reoxygenation rate, the oxygen sag curve shows _____ in a deficit of oxygen			
	A.	Increase	B.	Decrease
	C.	Constant	D.	Same
25	Chromium desirable limit for drinking water standard is _____ mg/l			
	A.	0.01	B.	0.05
	C.	0.001	D.	0.005
26	During which of the following conditions, the deoxygenation is equal to reoxygenation?			
	A.	Stream exposed to atmosphere	B.	Increased volume
	C.	Greener vegetation	D.	High temperature

27	Which one of the following is the basic indicator of river health?			
	A.	BOD	B.	COD
	C.	DO	D.	ThOD
28	What is the minimum amount of DO required for the life survival of aquatic animals?			
	A.	10 mg/l	B.	5 mg/
	C.	2 mg/l	D.	1 mg/l
29	Oxygen demanding wastes improves DO.			
	A.	True	B.	False

30	in the concept of self purification of natural streams, complete the following phrase. Solution to pollution is _____			
	A.	Control	B.	Dilution
	C.	Reuse	D.	Recycle

31	_____is accomplished by the replenishment of oxygen lost to bacterial degradation of organic waste.			
	A.	Gas transfer	B.	Dilution
	C.	Filtration	D.	Re-suspension

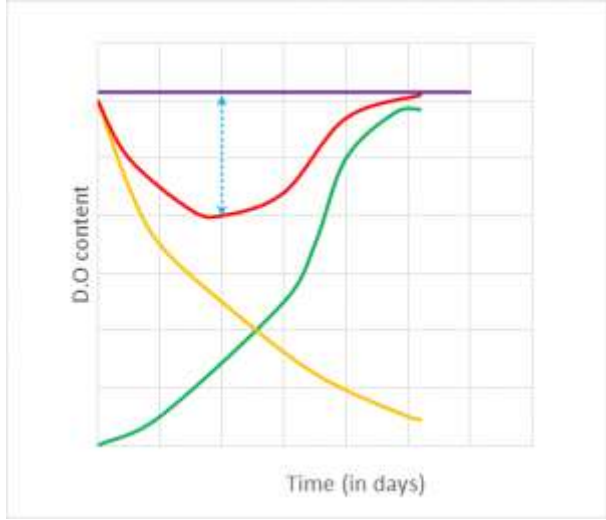
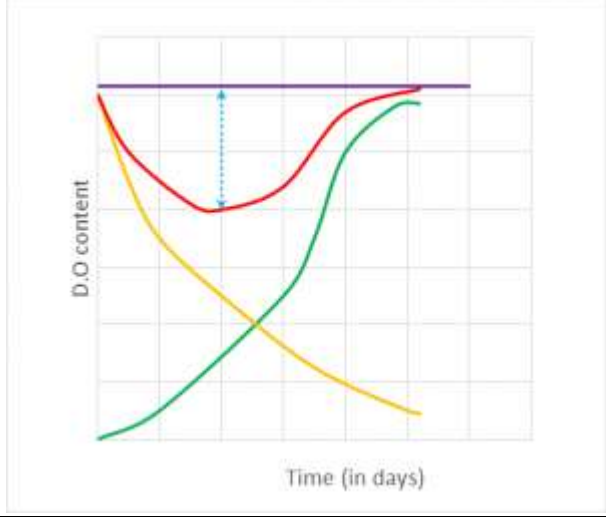
32	On which of the following does the self purification process does not depend?			
	A.	Volume	B.	Flow rate
	C.	Temperature	D.	Aquatic species

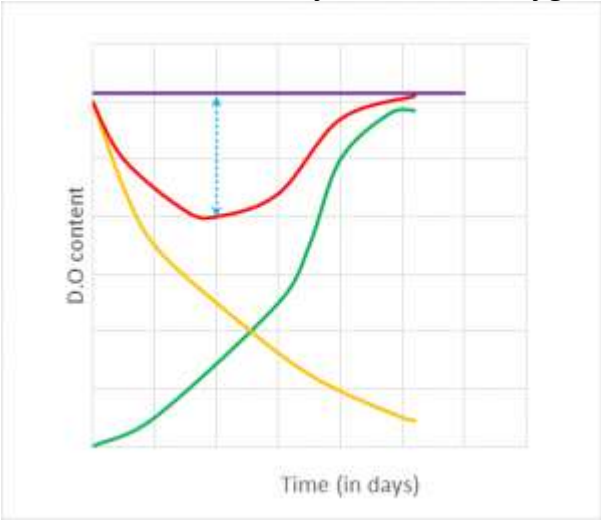
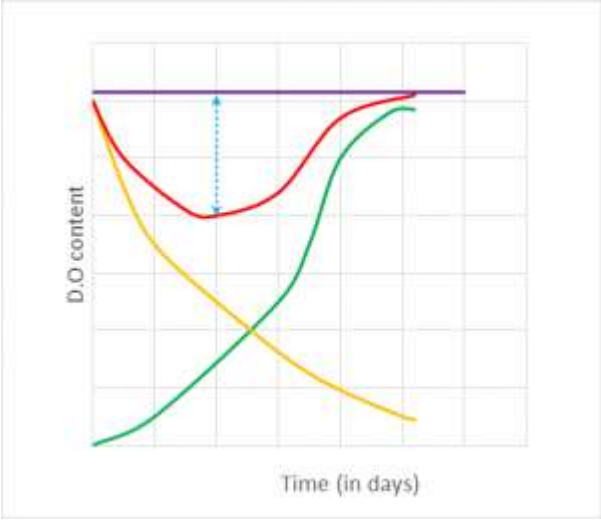
33	Flowing water bodies recover rapidly.			
	A.	True	B.	False

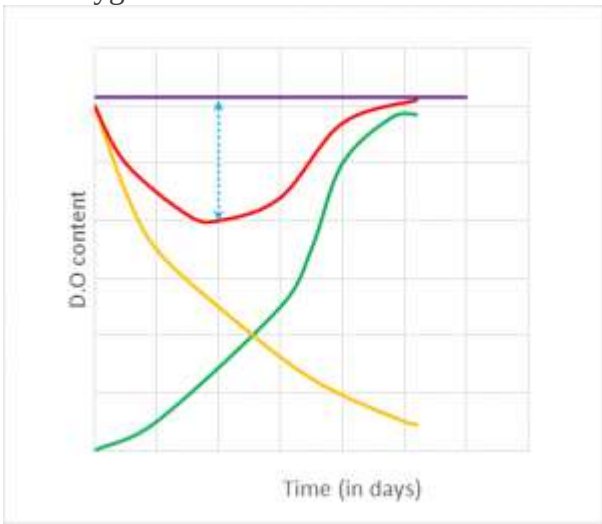
34	In a flowing stream, the breakdown of degradable wastes by bacteria_____dissolved oxygen.			
	A.	Increases	B.	Depletes
	C.	Maintains	D.	Improves

35	What is the objective of water quality management?			
	A.	Control the discharge of pollutants	B.	Pollutants are discharged into flowing streams
	C.	Selective pollutants are released	D.	Only highly toxic pollutants are released

36	The impact of pollution depends upon nature of the pollutants and the _____			
	A.	Toxic contaminants	B.	Season
	C.	Contaminants	D.	Characteristics of river

37	What is yellow curve represents in the following figure?			
				
	A.	Deoxygenation curve	B.	Reoxygenation curve
	C.	Oxygen sag curve	D.	Equilibrium concentration of oxygen
38	Which of the following is represented by the green curve in the following figure?			
				
	A.	Deoxygenation curve	B.	Reoxygenation curve
	C.	Oxygen sag curve	D.	Equilibrium concentration of oxygen

39	The maximum deficiency of dissolved oxygen is represented by _____			
				
	A.	Dotted blue line	B.	Green curve
	C.	Yellow curve	D.	Violet curve
40	Which of the following represents the oxygen sag curve in the following figure?			
				
	A.	Dotted blue line	B.	Yellow curve
	C.	Green curve	D.	Red curve

41	The oxygen deficit is maximum when?			
				
	A.	Rate of reaeration is 0	B.	Rate of deoxygenation is 0
	C.	Rate of reaeration equals the rate of deoxygenation	D.	Rate of reaeration > rate of deoxygenation
42	When the BOD of wastewater increases, then?			
	A.	Rate of reaeration decreases	B.	Rate of oxygen deficit increases
	C.	Rate of oxygen deficit decreases	D.	Amount of oxygen in wastewater increases
43	Rate of aeration is independent of the D.O content of wastewater.			
	A.	True	B.	False
44	A dilution is a process that increases the concentration of a substance in a solution.			
	A.	True	B.	False
45	Oxygen in water is consumed during aerobic biodegradation of organic compounds.			
	A.	True	B.	False
46	Which zone is include in self-purification ?			
	A.	Zone of degradation	B.	Zone of active decomposition
	C.	A&B	D.	None of the above
47	Which zone is include in self-purification ?			
	A.	Zone of recovery	B.	Clear water zone
	C.	A&B	D.	None of the above
48	Which are the factor affecting self-purification of streams?			
	A.	Dilution	B.	Oxidation
	C.	Reduction	D.	All of the above

49	Which are the factor affecting self-purification of streams?			
	A.	Current	B.	Sedimentation
	C.	Temperature	D.	All of the above
50	Which are the factor affecting self-purification of streams?			
	A.	Sunlight	B.	Dilution
	C.	A&B	D.	None of the above

CHAPTER -2 INDIAN STANDARDS FOR DISCHARGE OF WASTEWATER

1	_____ is a specific value or measurement			
	A.	Standard	B.	Criteria
	C.	A&B	D.	None of the above

2	Temperature standards for disposal into inland or surface water is _____ -			
	A.	30 c	B.	50 c
	C.	40 c	D.	60 c

3	Which is include in types of natural water bodies?			
	A.	Creeks	B.	Estuaries
	C.	A&B	D.	None of the above

4	Temperature Standards for land irrigation is _____			
	A.	30 c	B.	50 c
	C.	40 c	D.	60 c

5	_____ is a basis, a rationale/reason, a specification/requirement			
	A.	Standard	B.	Criteria
	C.	A&B	D.	None of the above

6	Conditions Favoring Disposal of Raw or Untreated Sewage by Dilution is _____			
	A.	Where sewage is comparatively fresh	B.	The floating matter and the settleable solids have been removed from the sewage
	C.	The water body has a large volume of water	D.	All of the above

7	PH Standards for land irrigation is _____			
	A.	2.5	B.	3.5
	C.	4.5	D.	5.5

8	Conditions Necessitating Treatment of Sewage before Disposal by Dilution is _____			
	A.	Where sewage contains such substances which are detrimental to the aquatic life in the receiving water body	B.	Where sewage contains industrial sewage containing toxic substances
	C.	Where the volume of diluting water is insufficient	D.	All of the above
9	Reason behind prescribe the tolerance limit for inland surface water is _____			
	A.	Drinking water source without conventional treatment followed by disinfection	B.	Outdoor bathing
	C.	Fish culture	D.	All of the above
10	PH standards for disposal into inland or surface water is _____			
	A.	5.5-6.6	B.	5.9-9.0
	C.	5.5-9.5	D.	5-6

11	Which are extreme care should be taken while discharging sewage in sea?			
	A.	There should be sufficient depth of water at the point of sewage discharge into the sea	B.	The sewage should be discharged deep into the sea and at a distance of 1 to 1.5 km away from the shore so as not to cause any nuisance at the sea shore
	C.	A&B	D.	None of the above

12	TSS standards for disposal into inland or surface water is _____			
	A.	10 mg/l	B.	100 mg/l
	C.	1000 mg/l	D.	1 mg/l

13	Which is include in types of natural water bodies?			
	A.	Ocean or sea	B.	Perennial rivers or streams
	C.	A&B	D.	None of the above

14	TSS Standards for land irrigation is _____			
	A.	2 mg/l	B.	20 mg/l
	C.	200 mg/l	D.	2000 mg/l

15	In which natural water bodies contain maximum sewage load?			
	A.	Sea	B.	River
	C.	Creeks	D.	Lakes

16	Conditions Favoring Disposal of Raw or Untreated Sewage by Dilution is _____			
	A.	Possible to thoroughly mix or diffuse sewage through diluting water.	B.	Where diluting water has high content of dissolved oxygen
	C.	The natural water body having large volumes of water is available in near vicinity	D.	All of the above
17	TDS Standards for land irrigation is _____			
	A.	21 mg/l	B.	210 mg/l
	C.	2100 mg/l	D.	Absent in land irrigation
18	Conditions Necessitating Treatment of Sewage before Disposal by Dilution is _____			
	A.	Where the receiving water body is to be used for navigation	B.	Where the receiving water body is to be used as a source of water supply
	C.	Where sewage is not fresh but is stale	D.	All of the above

19	Reason behind prescribe the tolerance limit for inland surface water is _____			
	A.	Irrigation, industrial cooling and controlled waste disposal	B.	Drinking water source with conventional treatment followed by disinfection
	C.	A&B	D.	None of the above

20	TKN standards for disposal into inland or surface water is _____ -			
	A.	10 mg/l	B.	100 mg/l
	C.	1000 mg/l	D.	1 mg/l

21	Which are extreme care should be taken while discharging sewage in sea?			
	A.	The sea outfall for sewage should be placed on a firm rocky foundation	B.	The sewage should be discharged below low water level and only at the time of low tides
	C.	A&B	D.	None of the above

22	Oil and grease standards for disposal into inland or surface water is _____			
	A.	10 mg/l	B.	100 mg/l
	C.	1000 mg/l	D.	1 mg/l

23	Which is include in types of natural water bodies?			
	A.	Ground waters	B.	Lakes
	C.	A&B	D.	None of the above

24	Oil and greases Standards for land irrigation is			
	A.	10 mg/l	B.	100 mg/l
	C.	1000 mg/l	D.	1 mg/l

25	Which natural water bodies contain high specific gravity?			
	A.	Stream water	B.	Sea water
	C.	Lake water	D.	Ground water
26	Conditions Favoring Disposal of Raw or Untreated Sewage by Dilution is _____			
	A.	Where the water body is not to be used as source of water supply	B.	Where sewage does not contain industrial sewage having toxic substances.
	C.	A&B	D.	None of the above

27	Aresenium Standards for land irrigation is _____			
	A.	0.1 mg/l	B.	0.01 mg/l
	C.	0.001 mg/l	D.	Nil

28	Conditions Necessitating Treatment of Sewage before Disposal by Dilution is _____			
	A.	Where sewage is not fresh but is stale	B.	Where sewage is not likely to be dispersed easily due to tides, winds, cross currents, etc
	C.	A&B	D.	None of the above

29	Which condition is suitable for sewage after discharge in sea water?			
	A.	Aerobic	B.	Anaerobic
	C.	Anoxic	D.	None of the above

30	BOD standards for disposal into inland or surface water is _____ -			
	A.	3 mg/l	B.	30 mg/l
	C.	300 mg/l	D.	Absent in surface water

31	Which method involved in disposal by land treatment?			
	A.	Irrigation or sewage farming	B.	Overland flow
	C.	Rapid infiltration or Infiltration-percolation	D.	All of the above

32	COD standards for disposal into inland or surface water is _____ -			
	A.	100 mg/l	B.	150 mg/l
	C.	200 mg/l	D.	250 mg/l

33	Sewage can be applied by irrigation is _____			
	A.	Sprinkler or spray irrigation	B.	Sub-surface irrigation
	C.	Surface irrigation	D.	All of the above

34	Cadmium Standards for land irrigation is			
	A.	0.1 mg/l	B.	0.01 mg/l
	C.	0.001 mg/l	D.	Nil
35	Conditions Favorable for Disposal of Sewage by Land Treatment is _____			
	A.	When natural water bodies are not available in near vicinity, the land treatment is the only alternative left, and has to be adopted	B.	When large areas of open land with sandy, loamy or alluvial soil overlying soft murrum are available, land treatment is favored
	C.	A&B	D.	None of the above
36	The sewage should be discharged deep into the sea and at a distance of _____			
	A.	2 to 2.5 km away from the shore	B.	1 km away from the shore
	C.	1 to 1.5 km away from the shore	D.	None of the above

37	Cr Standards for land irrigation is _____			
	A.	0.1 mg/l	B.	0.01 mg/l
	C.	0.001 mg/l	D.	Nil

38	Which method is adopted when soils must be highly permeable?			
	A.	Irrigation or sewage farming	B.	Overland flow
	C.	Rapid infiltration or Infiltration-percolation	D.	All of the above

39	Which method is adopted when the land is relatively impermeable?			
	A.	Irrigation or sewage farming	B.	Overland flow
	C.	Rapid infiltration or Infiltration-percolation	D.	All of the above

40	Boron standards for disposal into inland or surface water is _____ -			
	A.	1 mg/l	B.	2 mg/l
	C.	3 mg/l	D.	4 mg/l

41	Conditions Favorable for Disposal of Sewage by Land Treatment is _____			
	A.	When irrigation water is scarce, the use of sewage for irrigating crops is a good alternative	B.	When climate is arid land treatment is favored
	C.	A&B	D.	None of the above

42	Sulfide standards for disposal into inland or surface water is _____ -			
	A.	1 mg/l	B.	2 mg/l
	C.	3 mg/l	D.	4 mg/l

43	In which process sewage is applied directly on the land?			
	A.	Sprinkler or spray irrigation	B.	Sub-surface irrigation
	C.	Surface irrigation	D.	All of the above

44	BOD Standards for land irrigation is			
	A.	10 mg/l	B.	100 mg/l
	C.	1000 mg/l	D.	Absent mg/l

45	Conditions Favorable for Disposal of Sewage by Land Treatment is _____			
	A.	When there is demand for cash crops which can be easily grown on sewage farms	B.	When large areas of land with suitable soil conditions are available which will permit the use of sewage for groundwater recharge
	C.	A&B	D.	None of the above

46	In which process sewage is supplied directly to the root zone of plants?			
	A.	Sprinkler or spray irrigation	B.	Sub-surface irrigation
	C.	Surface irrigation	D.	All of the above

47	Zinc Standards for land irrigation is _____			
	A.	1 mg/l	B.	2 mg/l
	C.	3 mg/l	D.	4 mg/l

48	In which process sewage is sprinkled under pressure?			
	A.	Sprinkler or spray irrigation	B.	Sub-surface irrigation
	C.	Surface irrigation	D.	All of the above

49	Conditions Favorable for Disposal of Sewage by Land Treatment is _____			
	A.	Land treatment is favored when the subsoil water table is low even during the wet season	B.	When large open areas in the surrounding locality are available for practising broad irrigation by sewage
	C.	A&B	D.	None of the above

50	Total Cr standards for disposal into inland or surface water is _____ -			
	A.	1 mg/l	B.	2 mg/l
	C.	3 mg/l	D.	4 mg/l

CHAPTER -3 QUALITY OF WATERS FOR INDUSTRIES

1	PH range in boiler feed water during normal operation is			
	A.	8-8.5	B.	7.7.5
	C.	6-6.5	D.	5-5.5

2	Cooling water temperature range between _____			
	A.	40-50 °C	B.	40-60 °C
	C.	40-80 °C	D.	40-70 °C
3	Silica range in boiler feed water during normal operation is _____			
	A.	<10	B.	<20
	C.	<30	D.	<40
4	PH range in boiler feed water during startup operation is			
	A.	Min 7.0	B.	Min 8.0
	C.	Min 6.0	D.	Min 9.0

5	Cation conductivity range in boiler feed water during normal operation is _____			
	A.	Maximum 0.6	B.	Maximum 0.5
	C.	Maximum 0.2	D.	Maximum 0.8
6	Turbidity range in boiler feed water during normal operation is _____			
	A.	<2	B.	<3
	C.	<4	D.	<5
7	Cation Conductivity range in boiler feed water during startup operation is _____			
	A.	Max 0.2	B.	Max 0.4
	C.	Max 0.5	D.	Max 0.6

8	Dissolved Oxygen range in boiler feed water during normal operation is _____			
	A.	<5	B.	<8
	C.	<6	D.	<9
9	Turbidity range in boiler feed water during startup operation is _____			
	A.	<5	B.	<6
	C.	<7	D.	<8
10	Dissolved Oxygen range in boiler feed water during startup operation is _____			
	A.	Max 10	B.	Max 100
	C.	Max 1000	D.	Nil

11	Iron range in boiler feed water during normal operation is _____			
	A.	<1	B.	<2
	C.	<3	D.	<4
12	Silica range in boiler feed water during startup operation is _____			
	A.	<10	B.	<20
	C.	<30	D.	<40
13	Iron range in boiler feed water during startup operation is _____			
	A.	<10	B.	<20
	C.	<30	D.	<40

14	Sodium range in boiler feed water during normal operation is _____			
	A.	<1	B.	<2
	C.	<3	D.	<4
15	Sodium range in boiler feed water during startup operation is _____			
	A.	<1	B.	<10
	C.	<100	D.	<1000

CHAPTER -4 PRINCIPLES OF WATER POLLUTION CONTROL

1	Which is include in the preliminary treatment of waste water?			
	A.	Equalization tank	B.	UASB
	C.	ASP	D.	Screening

2	Which is include in primary treatment of waste water?			
	A.	UASB	B.	Neutralization tank
	C.	Screening	D.	SBR

3	Which unit operation is used to maintain desired flow?			
	A.	Grit removal	B.	UASB
	C.	Equalization tank	D.	Screening

4	Objective of equalization is			
	A.	To provide adequate dampening of organic fluctuations in order to prevent shock loading of biological systems	B.	To provide adequate pH control or to minimize the chemical requirements necessary for neutralization.
	C.	A&B	D.	None of the above

5	Function of equalization tank is		
	A.	The tank is rectangular in shape to provide placement of air diffusers for full floor coverage	B. The diffusers are retrievable
	C.	Aeration is carried out using coarse bubble diffusers	D. All of the above
6	Which is include in the component of an equalization tank?		
	A.	Inlet pipe	B. Sewage collecting tank
	C.	A&B	D. None of the above
7	Which process is used or the balance of acidity and alkalinity in the water?		
	A.	Neutralization	B. Sedimentation
	C.	Equalization	D. All of the above

8	Need of Neutralization is _____		
	A.	To prevent corrosion of pipelines and equipment leading from the industry to its ultimate destination	B. To comply with effluent standards for excessive acid or alkaline conditions in sewers or receiving waters. Sewers or receiving waters
	C.	A&B both	D. None of the above

9	Benefits of equalization tank is		
	A.	Equalization improves sedimentation efficiency by improving hydraulic detention time	B. The efficiency of a biological process can be increased because of uniform flow characteristics and minimization of the impact of shock loads and toxins during operation
	C.	A&B	D. None of the above

10	Component involve in neutralization system is _____		
	A.	Effluent holding tank	B. Level control
	C.	A&B both	D. None of the above

11	Flow equalization is the process to control _____		
	A.	Hydraulic velocity	B. Flow rate
	C.	A&B	D. None of the above

12	Which chemical is used for the neutralization of basic waste?		
	A.	Sulfuric acid	B. Hydrochloric acid
	C.	Nitric acid	D. All of the above

13	Which chemical is used for the neutralization of acid waste?			
	A.	Lime stone	B.	Sodium hydroxide
	C.	Ammonium hydroxide	D.	All of the above
14	Objective of equalization is			
	A.	To provide capacity for controlled discharge of wastes to municipal discharge of wastes to municipal systems	B.	To prevent high concentrations of toxic materials from entering the biological treatment plant.
	C.	A&B	D.	None of the above
15	Disadvantage of lime stone process is			
	A.	Does not treat alkaline (basic) waste streams	B.	No controls to regulate or oversee the process
	C.	No guarantee that the system will treat an acidic stream	D.	All of the above

16	Which is include in the component of an equalization tank?			
	A.	Aeration tank	B.	Delivery pipe
	C.	A&B	D.	None of the above

17	Waste reduction include _____			
	A.	Classification of waste,	B.	Conservation of wastewater,
	C.	A&B both	D.	None of the above

18	Need of Neutralization is _____			
	A.	To make certain that the waste discharge pH does not kill fish or otherwise affect other organisms in receiving waters	B.	Excessively acid or alkaline wastes should not be discharged into a receiving stream without treatment
	C.	A&B both	D.	None of the above

19	Benefits of equalization tank is _____			
	A.	A point of return for recycling concentrated waste streams is provided, thereby mitigating shock load to primary settlers or aeration basin	B.	The design of an equalization facility involves not only the sizing of the equalization tank, but also the provision of an operating strategy to ensure that the desired objectives are met
	C.	A&B	D.	None of the above

20	Classification of wastes involved			
	A.	Wastes from manufacturing processes	B.	Wastes used as cooling agents in industrial processes
	C.	Waste from sanitary uses	D.	All of the above

21	Conservation of wastewater: conserved means saved			
	A.	Reducing volume of process water is conservation	B.	recycling white water
	C.	A&B	D.	None of the above

22	Changing production to decrease waste means _____			
	A.	Difficult to convince production people to change process	B.	Effective method of controlling the volume of wastes
	C.	The entire unit including production and treatment of wastewater should be Considered to evaluate cost.	D.	All of the above

23	Waste strength reduction by _____			
	A.	Process changes	B.	Equipment modification
	C.	A&B	D.	None of the above

24	Objective of equalization is _____			
	A.	To minimize flow surges to physical-chemical treatment systems and permit chemical feed rates compatible with feeding equipment.	B.	To provide continuous feed to biological systems over periods when the manufacturing plant is not operating
	C.	A&B	D.	None of the above

25	Strength of waste may be reduced by _____			
	A.	Process changes	B.	Equipment modification
	C.	A&B	D.	None of the above

26	Which is include in the component of an equalization tank?			
	A.	Course bubble diffuser	B.	Pipe line
	C.	A&B	D.	None of the above

27	In textile industry starch sizing agent replaced by ____			
	A.	Carboxyl- methyl cellulose	B.	Methane
	C.	Protein	D.	All of the above

28	Equalization of waste involve _____			
	A.	Holding of wastes for certain period of time to equalize when many products using different processes are produced	B.	The detention time of equalization basin will be for complete cycle time of process
	C.	Stabilization of pH, BOD, SS and heavy metals can be achieved	D.	All of the above
29	Benefits of equalization tank is			
	A.	Manual and automated control of flow-rate-dependent operations, such as chemical feeding, disinfection, and sludge pumping, are simplified	B.	Treatability of the wastewater is improved and some BOD reduction
	C.	A&B	D.	None of the above

30	Component involve in neutralization system is _____			
	A.	Chemical pumps and reagent storage tanks	B.	Mixers/agitators
	C.	A&B both	D.	None of the above

31	In metal planting to reduce cyanide by replacing cyanide to _____			
	A.	Acid-copper solution	B.	Acid aluminum solution
	C.	Hydrogen sulfide	D.	Mercury

32	Example of segregation of waste is _____			
	A.	For cyanide waste make alkaline and oxidize	B.	For chromium waste acidified and reduced
	C.	A&B	D.	None of the above

33	Waste strength reduction by _____			
	A.	By-product recovery	B.	Segregation of wastes
	C.	Equipment modification	D.	All of the above

34	Which chemical is used for the neutralization of basic waste?			
	A.	Ammonium hydroxide	B.	Calcium hydroxide
	C.	A&B	D.	None of the above

35	Which chemical is used for the neutralization of basic waste?			
	A.	Carbon dioxide	B.	Phosphoric acid
	C.	A&B	D.	None of the above

36	Conservation of wastewater: conserved means saved			
	A.	During water storage industries are reducing water consumption	B.	Need change in mind set
	C.	A&B	D.	None of the above

37	Waste reduction include _____			
	A.	Changing production to decrease wastes	B.	Reusing both industrial and municipal effluents for raw water supplies
	C.	A&B	D.	None of the above

38	Need of Neutralization is _____			
	A.	To comply with effluent standards for excessive acid or alkaline conditions in sewers or receiving waters. Sewers or receiving waters	B.	To prevent corrosion of pipelines and equipment leading from the industry to its ultimate destination
	C.	pH does not kill or otherwise inactivate the microorganisms that are being used to biologically oxidize the organic matter content	D.	All of the above

39	In paper mill by product recovery is			
	A.	recovery of caustic soda from cooking liquors	B.	methane recovery
	C.	sludge digestion and drying and fertilizer	D.	All of the above

40	Component involve in neutralization system is			
	A.	Instrumentation for monitoring, controlling, and recording	B.	pH electrodes
	C.	A&B both	D.	None of the above

41	Conservation of wastewater: conserved means saved			
	A.	Concentrated waste streams are treated after usefulness of recycling	B.	Two fold saving: water costs and wastewater treatment cost
	C.		D.	

42	Waste strength reduction by _____			
	A.	Segregation of wastes	B.	Equalization of wastes
	C.	A&B	D.	None of the above

43	Which chemical is used for the neutralization of acid waste?			
	A.	Phosphoric acid	B.	Carbon dioxide
	C.	A&B	D.	None of the above

44	Which chemical is used for the neutralization of acid waste?			
	A.	Magnesium hydroxide	B.	Calcium hydroxide
	C.	A&B	D.	None of the above
45	Disadvantage of lime stone process is			
	A.	Limestone chips are easily coated rendering them useless	B.	Periodic replacement is necessary
	C.	Adds to the suspended solids (TSS) and dissolved solids (TDS) loading	D.	All of the above
46	Example of by product recovery is			
	A.	Black strap molasses from sugar to alcohol production	B.	sulphite waste liquor byproduct from paper mills used as fuel, road binder, insulating compound
	C.	A&B	D.	None of the above

47	Neutralization of basic waste is done by			
	A.	Sulfuric Acid H ₂ SO ₄	B.	Hydrochloric Acid - HCl
	C.	Nitric Acid - HNO ₃	D.	All of the above

48	Need of Neutralization is _____			
	A.	To make industrial waste compatible (in terms of pH) with municipal sewage when joint treatment is practiced	B.	its pH does not kill or otherwise inactivate the microorganisms that are being used to biologically oxidize the organic matter content
	C.	A&B both	D.	None of the above

49	Neutralization of acidic waste is done by			
	A.	Sodium Hydroxide NaOH	B.	Ammonium Hydroxide NH ₄ OH
	C.	Calcium Hydroxide Lime	D.	All of the above

50	Example of by product recovery is _____			
	A.	Waste yeast from brewery as poultry food	B.	Dried and evaporated butter milk from milk plant used as chicken food
	C.	In dairies materials collected on Oil and grease trap soap manufacturing	D.	All of the above

CHAPTER -5 REMOVAL OF HEAVY METALS AND RADIOACTIVE MATERIALS

1	_____refer chemical element that has a relatively high density and is toxic or poisonous at low concentrations.		
	A.	Heavy metal	B. Organic Substance
	C.	Inorganic substance	D. None of these

2	Health effect of mercury is_____		
	A.	Disruption of the nervous system	B. Damage to brain functions
	C.	DNA damage and chromosomal damage	D. All of the above

3	Health effect of Cadmium is_____		
	A.	Bone fracture	B. Damage to the immune system
	C.	Damage to the immune system	D. All of the above

4	Heavy metal removal method include_____ -		
	A.	Adsorption	B. Ion exchange
	C.	Electro dialysis	D. All of the above

5	_____is the adhesion of atoms, ions or molecules from a gas, liquid or dissolved solid to a surface		
	A.	Adsorption	B. Ion exchange
	C.	Electro dialysis	D. All of the above

6	Which material used as a commonly absorbent for removal of Heavy metal?		
	A.	Active carbon	B. Zeolite
	C.	Silica acid	D. None of the above

7	_____is a process of purification of aqueous solutions using solid polymeric ion exchange resin		
	A.	Adsorption	B. Ion exchange
	C.	Electro dialysis	D. All of the above

8	_____ is a technique that uses direct electric current (DC) to drive an otherwise non-spontaneous chemical reaction.		
	A.	Adsorption	B. Ion exchange
	C.	Electro dialysis	D. All of the above
9	Which Chemical are used in Electro dialysis process?		
	A.	NaoH	B. Nacl
	C.	A&B	D. None of the above

10	Environmental effect of choromium is _____		
	A.	Most of the chromium in air will eventually settle and end up in waters or soils	B. Chromium in soils strongly attaches to soil particles and as a result it will not move towards groundwater
	C.	In water chromium will absorb on sediment and become immobile	D. All of the above

11	Health effect of lead is _____		
	A.	Kidney damage	B. Miscarriages
	C.	Brain damage	D. All of the above

12	Electro Dialysis process used in _____		
	A.	Production of chlorine and sodium hydroxide, called the Chlor Alkali process	B. Production of sodium chlorate and potassium chlorate
	C.	Diminished learning abilities of children	D. All of the above

13	Sources of lead is _____		
	A.	fuel combustion	B. solid waste combustion
	C.	A& B	D. None of the above

14	Solvent Extraction also known as _____		
	A.	Liquid Liquid Extraction	B. Solid Liquid extraction
	C.	A&B both	D. None of the above

15	Solvent Extraction is used for removal of Heavy metal		
	A.	Lead	B. Zinc
	C.	Uranium	D. All of the above

16	Types of membrane include		
	A.	NF	B. UF
	C.	RO	D. ALL OF THE ABOVE

17	Reverse Osmosis process work on			
	A.	High to Low pressure	B.	Low to High Pressure
	C.	A&B	D.	None of the above
18	Dialysis work on principal is			
	A.	Diffusion of solute	B.	Transmission of solute
	C.	A&B	D.	None of the above
19	Copper limit as per WHO standard is _____			
	A.	1	B.	2
	C.	3	D.	4

20	Environmental effect of cadmium is			
	A.	cadmium-rich sludge can pollute surface waters as well as soils	B.	Soils that are acidified enhance the cadmium uptake by plants
	C.	A&B both	D.	None of this

CHAPTER -6 MAJOR INDUSTRIAL WASTES

1	Which is the byproduct of sugar industry?			
	A.	Bagsses	B.	Filter mud
	C.	Molasses	D.	All of the above

2	Which are the raw materials of sugar industry?			
	A.	Can sugar	B.	Beet sugar
	C.	Corn syrup	D.	All of the above

3	Environmental issues in Sugar Industries are			
	A.	Soil erosion	B.	Air pollution
	C.	Waste water generation	D.	All of the above

4	Sludge from waste water treatment in sugar industry are			
	A.	Aerobic digestion	B.	Anaerobic digestion
	C.	Gravity thickening	D.	All of the above

5	Which air pollution control equipment is used in sugar industry?			
	A.	Wet scrubber	B.	Bag house filter
	C.	ESP	D.	ASP
6	Which are the environmental issues in textile industry?			
	A.	Wastewater Generation	B.	Energy Consumption
	C.	Odour	D.	All of the above
7	Which are the general measures involved in textile industry _____			
	A.	Automatic dosage and dispensing systems for the dosage of chemicals	B.	When possible, manufacturing without chemical use
	C.	A&B	D.	None of the above

8	As per GPCB standard the range of particulate matter in sugar industry is _____			
	A.	50	B.	55
	C.	60	D.	65

9	As per GPCB standard the range of nitrogen dioxide in sugar industry is _____			
	A.	400	B.	200
	C.	300	D.	100

10	As per GPCB standard the range of mercury in sugar industry is _____			
	A.	0.5	B.	0.05
	C.	5	D.	None

11	Pharmaceutical products may be classified into			
	A.	Chemical	B.	Antibiotic
	C.	A & B	D.	None of the above

12	Pharmaceutical products are _____			
	A.	Tablets	B.	Piles
	C.	Capsule	D.	All of the above

13	Which process include in pharmaceutical industry?			
	A.	Fermentation	B.	Organic synthesis
	C.	Biological and natural process	D.	All of the above

14	Which step include in batch fermentation process?			
	A.	Inoculum and seed preparation	B.	Fermentation
	C.	Product recovery or isolation	D.	All of the above

15	BOD range in pharmaceutical industry is			
	A.	90-400 ppm	B.	9000 ppm
	C.	900-4000 ppm	D.	9-40 ppm
16	COD range in pharmaceutical industry is			
	A.	20-60 PPM	B.	200-600 PPM
	C.	2000-6000 PPM	D.	None of the above
17	TDS range in pharmaceutical industry is			
	A.	1300-7000 ppm	B.	1000-1300 ppm
	C.	1400-5000 ppm	D.	None of the above

18	TSS range in pharmaceutical industry is			
	A.	50-200	B.	500-2000
	C.	5-20	D.	None of the above

19	TKN range in pharmaceutical industry is			
	A.	8-10 ppm	B.	80-100 ppm
	C.	800-1000 ppm	D.	None of the above

20	Pharmaceutical products may be classified into _____			
	A.	Biological	B.	Animals
	C.	Vegetables	D.	All of the above

21	Which process include in textile industry?			
	A.	Cultivating	B.	Harvesting
	C.	Spinning-	D.	All of the above

22	Spinning s apply for _____			
	A.	giving yarn	B.	giving fabrics
	C.	giving textiles	D.	All of the above

23	Disposal standard from textile industry for BOD is _____ mg/l			
	A.	10	B.	20
	C.	30	D.	40

24	Disposal standard from textile industry for COD is _____ mg/l			
	A.	150	B.	200
	C.	250	D.	300

25	Disposal standard from textile industry for total residual chlorine is _____mg/l			
	A.	0.1	B.	1
	C.	0.01	D.	0.001
26	Disposal standard from textile industry for oil and grease is _____mg/l			
	A.	10	B.	100
	C.	1	D.	1000

27	Which secondary process is involved in textile industry?			
	A.	ASP	B.	UASB
	C.	MBR	D.	TF

28	Which primary process is involved in textile industry?			
	A.	Screening	B.	Sedimentation
	C.	Equalization	D.	All of the above

29	Screening is use for removal of _____			
	A.	Rags	B.	Fabric
	C.	Yarn	D.	All of the above

30	Which process include in textile industry?			
	A.	Weaving-	B.	Finishing-
	C.	A&B both	D.	None of the above

31	PH range in Dairy industry effluent is _____			
	A.	7-8	B.	6-7
	C.	5-6	D.	None of the above

32	BOD range in Dairy industry effluent is _____mg/l			
	A.	1200-1800	B.	120-180
	C.	1500-2000	D.	None of the above

33	COD range in Dairy industry effluent is _____mg/l			
	A.	1500-2000	B.	1500-3000
	C.	1500-2500	D.	1500-5000

34	S.S range in Dairy industry effluent is _____mg/l			
	A.	50-100	B.	500-1000
	C.	250-1000	D.	None of the above

35	TDS range in Dairy industry effluent is _____mg/l			
	A.	120	B.	1200
	C.	150	D.	1500
36	Alkalinity range in Dairy industry effluent is _____mg/l			
	A.	60	B.	600
	C.	6000	D.	None of the above
37	Oil and grease range in Dairy industry effluent is _____mg/l			
	A.	30	B.	300
	C.	25	D.	250

38	As per GPCB standard BOD value for dairy industry is _____mg/l			
	A.	100	B.	200
	C.	300	D.	400

39	Which secondary process is include in Dairy industry process ?			
	A.	ASP	B.	UASB
	C.	MBR	D.	RBC

40	Which is the part of Dairy industry process?			
	A.	Clarification	B.	Pasteurization
	C.	Homogenization	D.	All of the above

41	Which process is involved in fertilizer industry?			
	A.	Ammonia synthesis	B.	Urea synthesis
	C.	A&B both	D.	None of the above

42	Sources of waste water in fertilizer industry is _____			
	A.	Process water	B.	Wash water from gas scrubbing towers
	C.	Cooling tower and boiler blow downs	D.	All of the above

43	How many nutrient are required for plat growth?			
	A.	12	B.	14
	C.	15	D.	16

44	Fertilizer can be grouped in to _____			
	A.	Nitrogenous	B.	Phosphatic
	C.	Potassic	D.	All of the above

45	Total solids in fertilizer industry is _____			
	A.	2400 mg/l	B.	5400 mg/l
	C.	3400 mg/l	D.	None of the above
46	Urea nitrogen in fertilizer industry is _____			
	A.	60 mg/l	B.	600 mg/l
	C.	40 mg/l	D.	400 mg/l
47	BOD in fertilizer industry is _____			
	A.	800-1200 mg/l	B.	80-120 mg/l
	C.	400-1200 mg/l	D.	600-1200 mg/l

48	COD in fertilizer industry is _____			
	A.	100-140 mg/l	B.	1000-1400 mg/l
	C.	200-400 mg/l	D.	600-800 mg/l

49	Arsenic in fertilizer industry is _____ mg/l			
	A.	1.5	B.	0.15
	C.	2	D.	5

50	Which process is involved in fertilizer industry?			
	A.	Phosphoric acid	B.	Ammonium sulphate
	C.	Diammonium phosphate(DAP)	D.	All of the above