Uka Tarsadia University (Diwaliba Polytechnic)
Diploma in Environmental Engineering
Objective Type Questions (Solid Waste Management)

CHAPTER -1 INTRODUCTION TO SOLID WASTE MANAGEMENT

1. Waste removal system was established in which of the following cities for the first time?

   a. Athens
   b. Lahore
   c. Paris
   d. London

2. Which of the following solid wastes describe the term 'Municipal Solid Waste'?
   a. Toxic
   b. Hazardous
   c. Non-toxic
   d. Non-hazardous
3. Why it is difficult to recycle plastics?
   a. It is very hard
   b. It comes in different sizes
   c. It is adhesive
   d. It contains different types of polymer resins
4. Which of the following is done on an individual level?
   a. Burning
   b. Disposal
   c. Recycling
   d. Source reduction
5. Why is recycled paper banned for use in food containers?
   a. Because it creates a lot of spaces
   b. Because it creates contamination
   c. Because paper can be used only one time
   d. Because paper is very thick and can't cover the food containers
6. Which of the following plans are used as a waste management plan?
   a. Plan for reuse
   b. The integrated plan
   c. Plan for recycling
   d. Plan for reducing
7. The organic material of the solid waste will decompose
   a. By the flow of water
   b. By the soil particles
   c. By the action of microorganisms

d. By oxidation

8. Which of the following wastes are called the Municipal Solid Waste (MSW)?
    a. Food wastes
    b. Wood pieces
    c. Plastic cans
    d. All of the above
9. The process of burning municipal solid wastes under suitable temperature and conditions in a specific furnace is called_____.
    a. Landfill
    b. Incineration
    c. Recycling
    d. Vermicomposting
10. The burning of solid waste is not recommended because
    a. It is very costly
    b. It requires a lot of space
    c. It requires modern technologies
    d. It causes several environmental issues
11. When the organic matter present in the sanitary landfill decomposes, it generates
    a. Methane
    b. Nitrogen
    c. Hydrogen
    d. All of the above
12. Which of the following is the oldest and the most common method used to dump the solid wastes?
    a. River
    b. Ocean
    c. Landfill
    d. None of the above
13. The disposable wastes contain
    a. Solids
    b. Slurries
    c. Liquids
    d. All of the above
14. Find the correct statement
    a. The waste from one process becomes the input for another process
    b. All the processes related to consumption and production produce some kind of waste
    c. There is no real waste in nature
    d. All of the above
15. Which of the following methods is better for the solid waste problem?
    a. Recycling
    b. Landfilling
    c. Both a and b
    d. None of the above
16. Which of the following statements is incorrect for plastic wastes?
    a. It is used to make compost
    b. It lasts for a longer period of time
    c. Toxic fumes are produced when burnt

d. All of the above

17. Which of the following can be recycled many times?
    a. Wood
    b. Plastic
    c. Aluminium
    d. Organic materials
18. Which of the following gas is produced from landfill wastes?
    a. Biogas
    b. Natural gas
    c. Liquified petroleum gas
    d. All of the above
19. Which of the following statements is true about zero waste management?
    a. Separate collection of each kind of waste
    b. Segregation of garbage at the source
    c. Community involvement
    d. All of the above
20. How many main components are there in integrated waste management?
    a. Two
    b. Three
    c. Seven
    d. Eleven
21. How many major sources of solid waste are there based on their origin?
    a. 10
    b. 5
    c. 9
    d. 6
22. Which of the below is not an idea behind solid waste management?
    a. Control of waste generation
    b. Storage and collection
    c. Disposal
    d. Stop waste generation
23. The number of functional components of solid waste management is:
    a. 5
    b. 3
    c. 6
    d. 4
24. The term ISWM refers to:
    a. International Solid Waste Management
    b. Integrated Solid Waste Management
    c. Integrated Solid Waste Machine
    d. International Solid Waste Mechanism
25. Under which rule of Government, guidelines for solid waste management are followed today?
    a. Municipal Solid Waste Rules, 2000
    b. Municipal Solid Waste Rules, 2016
    c. Solid Waste Rules, 2000
    d. Solid Waste Rules, 2016
26. The average composition of Municipal solid waste is:

a. 41% organic, 40% inert & 19% recyclable
b. 20% organic, 60% inert & 20% recyclable
c. 30% organic, 20% inert & 50% recyclable
d. 19% organic, 41% inert & 40% recyclable

27. There are_____ways to treat waste thermally.
    a. 5
    b. 3
    c. 2
    d. 6
28. How many types of landfills are there?
    a. 3
    b. 2
    c. 5
    d. 4
29. Bio-medical waste can be effectively managed by the thermal process.
    a. True
    b. False
30. The WHO has classified the bio-medical waste into_____categories.
    a. 5
    b. 4
    c. 3
    d. 2
31. Which gas produced in open dumps from the decomposition of biodegradable waste?
    a. Ethane
    b. Methane
    c. Propene
    d. Ethene
32. Which was the first city to an established system of waste removal?
    a. Lahore
    b. Athens
    c. Paris
    d. London
33. Why burning waste is not an acceptable practice of solid waste management?
    a. Because it is very costly
    b. Because it requires modern technologies
    c. Because it cause several environmental issues
    d. Because it requires lot of space
34. What plan should we make to the disposal of solid waste?
    a. Integrated waste management plan
    b. Recycling of waste management plan
    c. Reducing of waste management plan
    d. Use of waste management plan
35. The term 'Municipal Solid Waste' is used to describe which kind of solid waste?
    a. Hazardous
    b. Toxic
    c. Non hazardous
    d. Non toxic
36. How many main components are there in integrated waste management?

a. One
b. Two
c. Three
d. Four

37. Municipal Solid Waste (MSW) contains a wide variety of materials.
    a. True
    b. False
38. Which of the integrated waste management is reduced on an individual level?
    a. Source reduction
    b. Recycling
    c. Disposal
    d. Burning
39. Which of the following can be recycled many times?
    a. Plastic
    b. Wood
    c. Organic materials
    d. Aluminium
40. Why plastics are difficult to recycle?
    a. Because it is very hard material
    b. Because it is very adhesive in its nature
    c. Because of different types of polymer resins
    d. Because of different sizes of plastic
41. How many key characteristics of a municipal sanitary landfill are there?
    a. One
    b. Two
    c. Three
    d. Four
42. How does organic material in the buried solid waste will decompose?
    a. By the action of oxidation
    b. By the action of microorganisms
    c. By the flow of water
    d. By the soil particles
43. What is called for the process of burning municipal solid waste in a properly designed furnace under suitable temperature and operating conditions?
    a. Landfill
    b. Recycling
    c. Vermicomposting
    d. Incineration
44. Why the recycled paper is banned for use in food containers?
    a. Because it creates contamination
    b. Because it creates a lot of spaces
    c. Because paper can be used only one time
    d. Because paper is very thick and can’t cover the food containers
45. Land filling is an economic alternative for solid waste disposal and it can be implemented easily.
    a. True
    b. False
46. What is the order of waste management hierarchy, from most to least favoured

a. Prevention- Recycle-Reuse- Disposal
b. Prevention-Reuse-Disposal-Recycle
c. Prevention-Disposal -Reuse-Recycle
d. Prevention-Reuse-Recycle-Disposal

47. What is a Geo-net?
    a. A synthetic material used for drainage of liquids
    b. A synthetic material used for drainage of Gases
    c. A ceramic material used for drainage of liquids
    d. A fibrous material used for drainage of liquids
48. In a leachate collection system, what is the slope of linear?
    a. 2-5%
    b. 2-8%
    c. 2-9%
    d. 2-10%
49. How do you remove leachate from the landfill?
    a. By Gravity
    b. By pumping from low points
    c. Both (a) and (b)
    d. None of the above
50. In a double liner system, what is the depth and coefficient of permeability for compacted soil?
    a. 2ft and K <= 10-6 cm/sec
    b. 3ft and K <= 10-7 cm/sec
    c. 2ft and K <= 10-7 cm/sec
    d. 3ft and K <= 10-6 cm/sec

CHAPTER -2 MUNICIPAL SOLID WASTE COLLECTION AND TRANSFER

1. What are the methods in which energy can be recovered from Waste to energy
   (1) Heat (2) Electricity (3) Co-generation
   a. By (1) and (2)
   b. By (2) and (3)
   c. By (1), (2) and (3)
   d. None of the above
2. Which of the following statement regarding recycling is wrong?
   a. Saves precious resources
   b. Require stable market
   c. Improves efficiency of treatment processes
   d. Increases the needs for mining virgin materials
3. What is the most expensive component of solid waste handling?
   a. Collection
   b. Storage
   c. Treatment
   d. Separation
4. What is the process flow in a integrated solid waste management system?
   a. Generation-Source separation- facility separation-collection- Transfer and

transport-Landfill

b. Generation-Source separation-collection- Transfer and transport -facility separation-Landfill

c. Generation-Source separation-collection-facility separation-Transfer and transport-Landfill

d. Generation-Source separation-collection- Landfill -facility separation Transfer and transport

5. Waste is any material that is not needed by the
    a. owner
    b. producer
    c. processor
    d. all of the above
6. Which of the following is true?
    a. there is no real waste in nature
    b. the apparent waste from one process becomes input to another
    c. all processes of production and consumption produce waste
    d. all of the above
7. Most disposable wastes are in the form of
    a. solids
    b. liquids
    c. slurries
    d. all of the above
8. The simplest and most common method used in the cities is to collect and dump the waste in a____.
    a. landfill
    b. river
    c. ocean
    d. any of the above
9. As the matter inside the sanitary landfill breaks down, it generates gases including
    a. nitrogen
    b. hydrogen
    c. methane
    d. all of the above
10. The 1989 Basel Convention aims to minimize
    a. the creation of hazardous waste
    b. reduce transboundary movement of hazardous waste
    c. prohibit shipment of hazardous waste to countries lacking the capacity to dispose them off
    d. all of the above
11. Feature(s) of Zero Waste Management is (are):
    a. Separation of garbage at the source
    b. Separate collection of each kind
    c. Involvement of the community in all activities
    d. all of the above
12. A good way of dealing with the solid waste problem is
    a. landfilling

b. recycling
c. both (A) and (B)
d. none of the above

13. _____can be produced from landfill waste
    a. natural gas
    b. liquefied petroleum gas
    c. biogas
    d. any of the above
14. Following statement is not true for plastic waste.
    a. produces toxic fumes when burnt
    b. can be used to make compost
    c. it lasts long
    d. all of the above
15. The process of burning of municipal solid waste at high temperature is called _____
    a. Incineration
    b. Composting
    c. Land filing
    d. Shredding
16. Which of the following is a biodegradable waste?
    a. Polythene bags
    b. Synthetic fiber
    c. Food waste
    d. Paper
17. In which method of disposal of municipal solid waste, the waste is dumped in the soil?
    a. Incineration
    b. Composting
    c. Land filing
    d. Shredding
18. Which of the following is correct regarding disposal of waste by land filling?
    a. Economical method
    b. Preferred in low lying areas
    c. Foul gases are not produced
19. The density of ash produced in the municipal solid waste is _____
    a. 100 kg/m3
    b. 450 kg/m3
    c. 700 kg/m3
    d. 1000 kg/m3
20. The process of decomposition of biodegradable solid waste by earthworms is called _____
    a. Land fills
    b. Shredding
    c. Vermi-composting
    d. Composting
21. The waste produced in cotton mills are _____
    a. Municipal solid waste
    b. Non biodegradable waste
    c. Hazardous waste
    d. Non hazardous waste

22. Which of the following is not the land filling method?
    a. Bangalore method
    b. Area method
    c. Depression method
    d. Trench method
23. _____is a liquid that passes through solid waste and extracts suspended impurities from it.
    a. Leachate
    b. Sludge
    c. Distilled water
    d. Municipal waste
24. Which of the following is not the municipal solid waste?
    a. Radioactive substance
    b. Ashes
    c. Food waste
    d. Rubbish
25. Which of the following waste can be decomposed by bacteria?
    a. Radioactive substance
    b. Ashes
    c. Food waste
    d. Rubbish
26. _____is the cutting and tearing of municipal solid waste.
    a. Land fills
    b. Shredding
    c. Pulverization
    d. Composting
27. _____is the crushing and grinding of municipal solid waste.
    a. Land fills
    b. Shredding
    c. Pulverization
    d. Composting
28. In which method of composting, decomposition of anaerobic waste takes place?
    a. Indian method
    b. Depression method
    c. Bangalore method
    d. Trench method
29. Which of the following is a biological method of disposal of municipal solid waste?
    a. Land fills
    b. Shredding
    c. Pulverization
    d. Composting
30. The process of burning of municipal solid waste at high temperature is called _____
    a. Incineration
    b. Composting
    c. Land filing
    d. Shredding

CHAPTER -3 SOLID WASTE PROCESSING AND DISPOSAL TECHNIQUES

1. Thermal treatment technologies are differentiated by _____
   a. Type of grate
   b. Chemicals
   c. Energy
   d. Temperature

2. _____from combustion of waste reduces cost.
   a. Chemical analysis
   b. Metals
   c. Material recovery
   d. LCA
3. _____emission is cited as an issue from incineration?
   a. Carbon
   b. Dioxin
   c. Sulphur
   d. Nitrogen
4. Thermal processing reduces hazard from waste.
   a. True
   b. False
5. _____% of waste by weight remains after combustion.
   a. 20-35
   b. 20-40
   c. 40-50
   d. 30-50
6. Ferrous materials are combustible.
   a. True
   b. False
7. Residence time of waste in combustion zone is_____seconds.
   a. 1
   b. 2
   c. 3
   d. 4
8. _____of hazardous waste plays a major role in designing combustion unit.
   a. Calorific value
   b. Chemical value
   c. Energy value
   d. Fuel value
9. Which of the following waste characteristic is considered for combustion?
   a. Flash point
   b. Energy point
   c. Burning point
   d. Melting point
10. Mechanical mixing of waste ensures _____
    a. Flash point

b. Even distribution
c. Hydrocarbon mixing
d. Less water requirement

11. Which of the following are the solid residues from incineration?
    a. Slag, fly ash, APC
    b. Klink, ash, BPC
    c. Gas, slag, APC
    d. Liquids, ash, slag
12. What is the emission limit for dioxins as per European Union?
    a. 0.1
    b. 0.2
    c. 0.3
    d. 0.4
13. _____furnace uses forces of gravity to help in mixing of waste.
    a. Bed plate
    b. Fluidised bed
    c. Incineration grate
    d. Rotary
14. Which of the following combustion technology is suitable for homogeneous and wet wastes?
    a. Bed plate
    b. Fluidised bed
    c. Incineration grate
    d. Rotary
15. In which of the following combustion technique waste is introduced to a bed of sand which is kept in suspension?
    a. Bed plate
    b. Fluidised bed
    c. Incineration grate
    d. Rotary
16. Which of the following waste combustion furnace is opted for waste of same size and density?
    a. Bed plate
    b. Fluidised bed
    c. Incineration grate
    d. Rotary
17. Which of the waste combustion technique is opted for solid waste treatment?
    a. Bed plate
    b. Fluidised bed
    c. Incineration grate
    d. Rotary
18. Which of the following furnaces withstand high temperature?
    a. Bed plate
    b. Fluidised bed
    c. Incineration grate
    d. Rotary
19. Optimum temperature range for a furnace is_____degree Celsius.
    a. 850-1200
    b. 800-1200

c. 700-1250
d. 800-1250

20. What is the average plant capacity of rotary kiln incinerator?
    a. 20000-50000 tonnes per year
    b. 25000-50000 tonnes per year
    c. 200000-540222 tonnes per year
    d. 457916-595263 tonnes per year
21. Complete destruction of hazardous components is done in first chamber of rotary kiln.
    a. True
    b. False
22. Which of the following combustion enables operator to control residence time and temperatures?
    a. Rotary kiln
    b. Fluidised bed
    c. Pyrolysis
    d. Rotary furnace
23. Which of the following combustion technology destroys persistent chlorinated hydrocarbons?
    a. Rotary kiln
    b. Fluidised bed
    c. Pyrolysis
    d. Rotary furnace
24. Manufacture of charcoal is example of pyrolysis.
    a. True
    b. False
25. Which of the following combustion technology is used for pre-treatment of health care waste?
    a. Rotary kiln
    b. Fluidised bed
    c. Pyrolysis
    d. Rotary furnace
26. Which of the following combustion takes place in closed container in presence of oxygen?
    a. Rotary kiln
    b. Fluidised bed
    c. Pyrolysis
    d. Gasification
27. Hazardous waste guidelines provide mainly criteria for location, site selection.
    a. True
    b. False
28. For a selected hazardous landfill site, if water table is within 2.0 m to 6.0 m, which of the following liner is opted?
    a. Single
    b. Double
    c. Triple
    d. Multi-liner
29. Single composite liner system has a leachate collection layer of thickness_____cm.
    a. 10
    b. 20

c. 30
d. 40

30. Single composite liner comprise compacted clay layer of thickness_____cm.
    a. 100
    b. 150
    c. 200
    d. 250
31. What is the coefficient of permeability in double composite liner system?
    a. 10-2
    b. 10-3
    c. 10-4
    d. 10-5
32. Double composite liner comprise compacted clay layer of thickness_____cm.
    a. 100
    b. 45
    c. 20
    d. 25
33. A layer of local top solid which provisions self-sustaining vegetation should have thickness of _____cm.
    a. 50
    b. 60
    c. 70
    d. 80
34. What should be the distance between the storage sheds in storage unit?
    a. 10
    b. 15
    c. 20
    d. 25
35. Waste having flash point less than 65.5 degree C, the drums should be stacked more than one height.
    a. True
    b. False
36. What is the normal storage time of incinerable hazardous waste at the incinerator site?
    a. 4 months
    b. 5 months
    c. 6 months
    d. 7 months
37. Which of the following is the most important variable in the construction of soil liners?
    a. Type of compaction
    b. Permeability
    c. Flammability
    d. Ignitability
38. Excavation of soil in a location for liner is known as_____pit.
    a. Dig
    b. Borrow
    c. Barrow
    d. Excavated
39. Bentonite is mixed when there is not enough clay available at a site to construct a soil liner.

a. True
b. False

40. Which among the following is used as clay material for clay liner?
    a. Kaolinite
    b. Lead
    c. Sulphur
    d. Bromide
41. What is the design permeability of the clay liner?
    a. 10-8
    b. 10-9
    c. 10-10
    d. 10-11
42. PVC liners are suitable for landfills.
    a. True
    b. False
43. Drainage pipes of leachate collection system is filled with _____
    a. Gravel
    b. Dust
    c. Clay
    d. Grass
44. What should be the slope percent between primary and secondary liners?
    a. 1
    b. 2
    c. 3
    d. 4
45. What is the formula for quantification of leachate generation from landfill?
    a. I = P – P (CR/O) – AET +/- S
    b. P = I – P (CR/O) – AET +/- S
    c. I = S – P (CR/O) – AET +/- P
    d. I = P – S (CR/O) – AET +/- Y
46. The lateral leachate collection pipes shall slope towards_____pipe.
    a. Sump
    b. Drain
    c. Main
    d. Longitude
47. Types of separation process include _____
    a. Screening
    b. Flotation
    c. Air classification
    d. All of the above
48. Method of Disposal involved _____
    a. Dumping
    b. Incineration
    c. Composting
    d. All of the above
49. Method of Disposal involved _____
    a. Manure pits
    b. Burial

c. A&B both
d. None of the above

50. Which method is used for composting?
    a. Bangalore Method
    b. Mechanical Composting
    c. A&B both
    d. None of the above

CHAPTER -4 HAZARDOUS WASTE MANAGEMENT AND HANDLING

1. Characteristic of an hazardous waste that causes fire is _____
    a. Ignitibility
    b. Corrosivity
    c. Reactivity
    d. Toxicity
2. Character exhibited by waste oils is _____
    a. Ignitibility
    b. Corrosivity
    c. Reactivity
    d. Toxicity
3. For a waste to be considered ignitable the alcohol content should be less than _____ percent.
    a. 21
    b. 22
    c. 23
    d. 24
4. For a waste to be considered ignitable the flash point should be less than_____Celsius.
    a. 50
    b. 60
    c. 70
    d. 80
5. Flash point of an ignitable waste is determined by_____tester.
    a. Pensky-Martens
    b. Donald
    c. Harry-styles
    d. Max-light
6. What is the parameter responsible for ignitibility in non-liquid waste?
    a. Temperature
    b. Volume
    c. Area
    d. Storage
7. What is the parameter responsible for ignitibility in non-liquid waste?
    a. Temperature
    b. Volume
    c. Area
    d. Storage
8. Compressed gas has ignitable characters.

a. True
b. False

9. If the HW is ignitable it undergoes chemical changes.
    a. True
    b. False
10. Hazardous waste number of material that is not considered ignitable is _____
    a. D002
    b. D003
    c. D001
    d. D005
11. Identified character of corrosivity is _____
    a. pH
    b. Temperature
    c. Pressure
    d. Friction
12. Toxic contaminant migration occurs in corrosive activity.
    a. True
    b. False
13. Acidic waste possess_____character.
    a. Ignitable
    b. Corrosive
    c. Toxic
    d. Reactive
14. _____is a prime indicator of corrosion.
    a. Steel
    b. Lead
    c. Mercury
    d. Zinc
15. pH of corrosive substance is less than or equal to _____
    a. 0
    b. 1
    c. 2
    d. 3
16. Steel corrosion rate by corrosive liquid or substance is_____mm/year.
    a. 6
    b. 6.1
    c. 6.2
    d. 6.35
17. Steel corrosion rate by corrosive liquid or substance is observed at temperature _____ Celsius.
    a. 50
    b. 55
    c. 60
    d. 65
18. A non-aqueous substance produces pH of the corrosive standards when mixed with water is considered to have corrosive character.
    a. True
    b. False

19. To establish corrosive character, the test by EPA is_____method.
    a. 1111A
    b. 1110A
    c. 1111Q
    d. 1111Z.
20. Hazardous waste number of material that is not considered corrosive is _____
    a. D001
    b. D000
    c. D002
    d. D003
21. A waste that is unstable and undergoes rapid changes is a character of _____
    a. Ignitable
    b. Corrosive
    c. Toxic
    d. Reactive
22. The waste character responsible for vigorous reaction is _____
    a. Ignitable
    b. Corrosive
    c. Toxic
    d. Reactivity
23. Zinc waste exposed to pH conditions between 2 and 12.5 can generate toxic gases.
    a. True
    b. False
24. If a hazardous material has_____character, it detonates when heated.
    a. Ignitable
    b. Corrosive
    c. Toxic
    d. Reactive
25. A forbidden explosive is reactive.
    a. True
    b. False
26. The main identification of reactive waste is _____
    a. Temperature
    b. Pressure
    c. Instability
    d. Volume
27. Which of the following is an example for reactive waste character?
    a. Steel smelting
    b. Iron manufacturing
    c. TNT operations
    d. Zinc smelting
28. Toxic gases are produced if the waste holds_____character.
    a. Ignitable
    b. Corrosive
    c. Toxic
    d. Reactive
29. Hazardous waste number of material that is not considered reactive is _____
    a. D001

b. D000
c. D002
d. D003

30. Toxicity is characterized by _____
    a. Instability
    b. Volume
    c. Temperature
    d. Dosage
31. A waste to be called toxic, acute oral LD50 concentration should be_____mg/kg.
    a. 2200
    b. 2300
    c. 2400
    d. 2500
32. A waste to be called toxic, acute dermal LD50 concentration should be_____mg/kg.
    a. 2200
    b. 4300
    c. 2400
    d. 2500
33. LC50 is associated with toxicity.
    a. True
    b. False
34. A waste to be called toxic, acute inhalation LC50 concentration should be_____ppm.
    a. 2200
    b. 4300
    c. 2400
    d. 10000
35. _____test is done to determine toxicity level of waste.
    a. EP
    b. SD
    c. AW
    d. PO
36. Leaching actions are observed for finding toxicity concentrations.
    a. True
    b. False
37. Maximum concentration of D004 waste is_____mg/L.
    a. 2
    b. 3
    c. 4
    d. 5
38. Maximum concentration of D009 waste is_____mg/L.
    a. 0.1
    b. 0.2
    c. 0.3
    d. 0.4
39. Maximum concentration of D015 waste is_____mg/L.
    a. 0.2
    b. 0.3
    c. 0.4

d. 0.5

40. How many lists are observed according to CFR?
    a. 1
    b. 2
    c. 3
    d. 4
41. The lists that identifies manufacturing waste is _____
    a. F and K
    b. P and U
    c. A and B
    d. C and D
42. _____list waste is from non-specific source.
    a. P
    b. F
    c. K
    d. U
43. F list wastes are divided into_____groups.
    a. 5
    b. 6
    c. 7
    d. 8
44. _____list waste is from specific source.
    a. P
    b. F
    c. K
    d. U
45. A waste to be listed under K, it must fit into_____categories of list.
    a. 12
    b. 13
    c. 4
    d. 15
46. What is the hazardous waste number for halogenated compounds?
    a. F005
    b. F006
    c. K005
    d. K006
47. The lists that identifies unused waste is _____
    a. F and K
    b. P and U
    c. A and B
    d. C and D
48. _____list identifies waste from acute discarded chemicals.
    a. P
    b. F
    c. K
    d. U
49. _____list identifies waste from acute discarded chemicals.
    a. P

b. F
c. K
d. U

50. What is the hazardous waste number of Acrolein?
    a. P001
    b. P002
    c. P003
    d. P004

CHAPTER -5 SOLID WASTE MANAGEMENT RULES

1. Spill risk of hazardous waste is high during manufacturing.
    a. True
    b. False
2. Labelling of container is done to _____
    a. Leak proof material
    b. Identify waste
    c. Technical competence
    d. To describe hazard
3. Regulatory requirements for packaging, labelling and transportation of hazardous wastes are provided under _____
    a. HWMR
    b. NPL
    c. HPS
    d. QHIS
4. The containers must be able to withstand normal handling and retain integrity for a minimum period of_____months.
    a.3
    b.4
    c.5
    d.6
5. Container used for packing shall be of _____
    a. Mild steel
    b. Lead
    c. Copper
    d. Sulphur
6. Air vents should be provided while packing liquid material.
    a. True
    b. False
7. Which of the following shall be included on the container that contain HW?
    a. Hazardous property
    b. Lead content
    c. Acid content

8. Transporter should not accept hazardous wastes from an occupier generator unless _____
    a. Copies of manifest is provided
    b. Chemical analysed
    c. Listed
    d. Coded
9. White manifest copy has to be _____
    a. Forwarded to SPCB by occupier
    b. Signed by transporter
    c. Retained by operator
    d. Returned to transporter
10. Yellow manifest copy has to be _____
    a. Forwarded to SPCB
    b. Signed by transporter
    c. Retained by operator
    d. Returned to transporter
11. Orange manifest copy has to be _____
    a. Forwarded to SPCB
    b. Signed by transporter
    c. Retained by operator
    d. Returned to transporter
12. Pink manifest copy has to be _____
    a. Forwarded to SPCB
    b. Signed by transporter
    c. Retained by operator
    d. Returned to transporter
13. Green manifest copy has to be _____
    a. Forwarded to SPCB
    b. Signed by transporter
    c. Retained by operator
    d. Forwarded to SPCB by operator of facility
14. Blue manifest copy has to be _____
    a. Forwarded to SPCB
    b. Signed by transporter
    c. returned to the occupier by the operator after disposal
    d. Forwarded to SPCB by operator of facility
15. In case of inter-state transportation of hazardous waste the generator shall obtain _____
    a. NOC
    b. NPL
    c. RCRA
    d. CERCLA
16. Any person by site whose act causes hazardous waste to become subject to regulation is known as _____
    a. Generator
    b. Transporter
    c. Producer
    d. Importer

17. Person who removes hazardous waste residues in a vehicle that have carried raw materials and sludge is a generator.
    a. True
    b. False
18. Under_____regulations, carried is also considered generator if carrier imports HW.
    a. DOT
    b. NPL
    c. NEPA
    d. HLP
19. Which of the following DOT regulation is applied to all hazardous material?
    a. Identification of waste
    b. Coding
    c. Analysis
    d. Transport
20. If the waste generated is hazardous, generators should obtain _____
    a. Permit
    b. Manifest
    c. Identification number
    d. Chemical analysis
21. Hazardous waste transportation regulations are regulated by_____and _____
    a. EPA, DOT
    b. NPL, DOT
    c. EPA, NEPA
    d. EPA, HPS
22. Generators are responsible for providing transportation.
    a. False
    b. True
23. Generators may periodically exceed or fall below their normal generation limits are considered_____generator.
    a. Episodic
    b. SQG
    c. LQG
    d. MQG
24. A transporter of hazardous waste is subject to regulations under_____
    a. RCRA
    b. CERCLPA
    c. NEPA
    d. NPL
25. A transporter is prohibited from transporting hazardous waste if they do not have an ID number.
    a. True
    b. False
26. EPA transportation ID is site-specific.
    a. True
    b. False
27. _____is designed to track hazardous waste from the time it leaves the generator facility to TSDF.
    a. Waste manifest system

b. Chemical analysis
c. Manifest
d. NPL

28. How long does the transporter must keep a copy of the manifest?
    a.1
    b.2
    c.3
    d.4
29. _____transporters are exempted from the manifest requirements.
    a. NPL
    b. SQG
    c. LQG
    d. MQG
30. In case of transporting SQG waste the vehicle used to transport the waste must be owned by _____
    a. Recycling facility
    b. Exporter
    c. Importer
    d. Trans-boundary owner
31. The regulations governing imports and exports of hazardous waste found in _____
    a. 40 CFR
    b. 41 CFR
    c. 42 CFR
    d. 43 CFR
32. Vehicle used for transportation shall be in accordance with _____
    a. NPL
    b. MVA
    c. HPS
    d. RCRA
33. Transporter should have valid_____during transportation.
    a. PUCC
    b. NPL
    c. MVA
    d. RCRA
34. Vehicles shall be painted preferably in_____colour for identification.
    a. Red
    b. White
    c. Yellow
    d. Blue
35. Which of the following should be provided utmost importance while transporting HW?
    a. Emergency number
    b. Waste analysed
    c. Vehicle ID
    d. Transport ID
36. Including tachograph in trucks were employed by _____
    a. IIHS
    b. IHTS
    c. IPYS

d. IITA

37. 115. Which among the following are the main carrier of bulk transport on road?
    a. Tanks
    b. Cargo tanks
    c. Trucks
    d. Tankers
38. Capacity range of cargo tank is_____gallons.
    a. 4000-12000
    b. 4000-8000
    c. 8000-12000
    d. 5000-10000
39. The large private interstate transporters have new tankers.
    a. True
    b. False
40. Useful life of cargo tanks used to export_____years.
    a. 10
    b. 20
    c. 30
    d. 40
41. Life span of tanker carrying corrosive is less.
    a. True
    b. False
42. Which of the following transportation poses greater property damage?
    a. Gasoline
    b. Oil
    c. Fuel
    d. Propane
43. What is the useful life span of tankers in rail shipment?
    a. 30
    b. 50
    c. 70
    d. 20
44. What is the percent of chemicals transported in rail tonnage?
    a. 60
    b. 66
    c. 70
    d. 76
45. What is the capacity range of tank barges used in marine shipment?
    a. 30000-60000
    b. 20000-30000
    c. 20000-30000
    d. 4000-50000
46. Which among the following comes under non-bulk transportation?
    a. Gasoline
    b. Fuel
    c. Oil
    d. Wood
47. What proportion of healthcare waste is hazardous waste?

a. 15%
b. 25%
c. 50%
d. 85%

48. Cyototoxic and expired drugs are disposed of by
    a. dumping
    b. autoclave
    c. incineration
    d. chemical disinfection
49. The color code of plastic bag for disposing of microbial laboratory culture waste –
    a. black
    b. red
    c. blue
    d. white
50. The placenta is disposed of in a ———– color bag
    a. red
    b. blue
    c. yellow
    d. black

CHAPTER -6 BIOMEDICAL WASTE MANAGEMENT

1. What proportion of healthcare waste is hazardous waste
    a. 15%
    b. 25%
    c. 50%
    d. 85%
2. Amount of waste infectious produced in hospitals –
    a. 45%
    b. 65%
    c. 80%
    d. 100%
3. Cyototoxic and expired drugs are disposed of by
    a. dumping
    b. autoclave
    c. incineration
    d. chemical disinfection
4. Average hospital waste produced per bed per day in Government hospital –
    a. 1–5-2.0 kg
    b. 0.5–4 kg
    c. 0.5–1 kg
    d. 0.5–2 kg
5. Autoclaving and microwaving are done for which of the following types of medical waste
    a. human anatomical waste
    b. recyclable contaminated waste

c. cytotoxic drugs
d. microbiological waste

6. The color code of plastic bag for disposing of microbial laboratory culture waste –
   a. black
   b. red
   c. blue
   d. white
7. The placenta is disposed of in a ———– color bag
   a. red
   b. blue
   c. yellow
   d. black
8. High priority in triage is for –
   a. yellow color
   b. red color
   c. green color
   d. black color
9. False statement about yellow bags is
   a. they are made of non-chlorinated plastic material
   b. intravenous tubes and catheters are disposed of in it
   c. discarded linen, mattresses, bedding contaminated with blood or body fluid, routine masks and gown are disposed of in the yellow bag
   d. silver X-Ray films, discarded formalin, aspirated body fluids, liquids from laboratories and cleaning floor is discarded in the yellow cover
10. Size of dust particles reaching alveoli
    a. <5 microns
    b. 5-10 microns
    c. >15 microns
    d. 10-15 microns
11. All the following waste can be incinerated except
    a. reactive chemical waste
    b. vaccine
    c. mutilated parts
    d. discarded drugs
12. Match the following

1. red	a.medium priority
2.yellow	b.dead or moribund patient
3.green	c.high priority treatment or transfer
4.black	d.ambulatory patient

    a. 1⇒c, 2⇒a, 3⇒d, 4⇒b
    b. 1⇒a, 2⇒b, 3⇒c, 4⇒d
    c. 1⇒b, 2⇒d, 3⇒a, 4⇒c
    d. 1⇒d, 2⇒c, 3⇒b, 4⇒a
13. Metallic body implant should be disposed of in
    a. cadmium-free red color bag
    b. puncture proof leak-proof box with the blue color marking

c. puncture proof leak-proof container
d. can be disposed of with general waste

14. For the disposal of hospital refuse, the bag made with cadmium is not used because incineration of the bag causes poisonous toxic fumes evolution. The color of the bag is –
    a. Black
    b. Red
    c. Blue
    d. Yellow
15. Blood bag is disposed of in
    a. red bag
    b. yellow bag
    c. green bag
    d. black bag
16. Best for incineration of infectious waste –
    a. Single – chamber
    b. Double – chamber
    c. Triple – chamber
    d. None
17. How should linen soaked in the blood of an HIV patient be disposed of
    a. pour 1% hypochlorite on the dressing material and send it for incineration in an appropriate bag
    b. pour 5% hypochlorite on the dressing material and send it for incineration in an appropriate bag
    c. put the dressing directly in a bag and send it for incineration
    d. pour 2% Lysol on the dressing material and send it for incineration in an appropriate bag
18. Natural disaster causing maximum deaths :
    a. Meteorological
    b. Geological
    c. Hydrological
    d. Fires
19. In which of the following ways should a medical waste not be disposed
    a. 21 weeks dead fetus should be deeply buried in a yellow bag
    b. blood bag should be first treated with nonchlorinated disinfectant
    c. glass ampoule with the drug should be incinerated
    d. radiological waste should be disposed of according to the radiological biomedical waste department guidelines
20. Which of the following is the nodal center for disaster management –
    a. PHC
    b. CHC
    c. Control room
    d. None
21. The cover of the foleys catheter of a HbsAg positive patient is disposed of in a ———– bag
    a. yellow
    b. red
    c. blue
    d. black
22. Epidemics after a disaster are caused by all except –

a. Leptospirosis
b. Rickettsiosis
c. Leishmaniasis
d. Acute respiratory infection

23. Which vaccination should be given to workers who deal with biomedical waste
    a. HbsAg
    b. tetanus
    c. rabies
    d. both 1 and 2
24. In PHC how to dispose of the placenta
    a. Microwaving
    b. Autoclaving
    c. Chemical treatment
    d. Incineration
25. Which for the following is not a high heat system for treating biomedical waste
    a. hydroplaning
    b. incineration
    c. autoclaving
    d. dry heat sterilization
26. Biomedical waste classification include _____
    a. Non infection waste
    b. Cytotoxic and heavy metal
    c. Chemical and pharmaceutical waste
    d. All of the above
27. Biomedical waste management act come into
    a. 1987
    b. 1998
    c. 1989
    d. 1990
28. Which is the objective of BMW _____
    a. To minimize the production
    b. Recycle the waste after to the extent possible
    c. Safe precaution during handling of waste
    d. All of the above
29. Category 1 in bio medical waste is _____
    a. Human anatomical waste
    b. Animal waste
    c. Biotechnology waste
    d. Waste sharp
30. Category 2 in bio medical waste is _____
    a. Human anatomical waste
    b. Animal waste
    c. Biotechnology waste
    d. Waste sharp
31. Category 3 in bio medical waste is _____
    a. Human anatomical waste
    b. Animal waste
    c. Biotechnology waste

d. Waste sharp

32. Category 4 in bio medical waste is _____
    a. Human anatomical waste
    b. Animal waste
    c. Biotechnology waste
    d. Waste sharp
33. Category 5 in bio medical waste is _____
    a. Human anatomical waste
    b. Animal waste
    c. Biotechnology waste
    d. Cytotoxic drug
34. Category 6 in bio medical waste is _____
    a. Soiled waste
    b. Animal waste
    c. Biotechnology waste
    d. Cytotoxic drug
35. Category 7 in bio medical waste is _____
    a. Solid waste
    b. Animal waste
    c. Discarded medicine
    d. Waste sharp
36. Category 8 in bio medical waste is _____
    a. Liquid waste
    b. Animal waste
    c. Waste sharp
    d. None of the above
37. Category 9 in bio medical waste is _____
    a. Liquid waste
    b. Animal waste
    c. Waste sharp
    d. Incineration ash
38. Category 10 in bio medical waste is _____
    a. Chemical waste
    b. Thermal waste
    c. Hazardous Waste
    d. All of the above
39. Category 1 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
40. Category 2 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
41. Category 3 is disposed in of _____
    a. Black

b. Red
c. Blue
d. Yellow

42. Category 4 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
43. Category 5 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
44. Category 6 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
45. Category 7 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
46. Category 8 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. None of the above
47. Category 9 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
48. Category 10 is disposed in of _____
    a. Black
    b. Red
    c. Blue
    d. Yellow
49. Which treatment provide for category 5?
    a. Autoclaving
    b. Microwaving
    c. Incineration
    d. Disposal in land fil
50. Which Category does not require container or bag ?
    a. Category 2
    b. Category 3
    c. Category 4
    d. Category 8