

BT503 Environment Biotechnology

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MID

- MID TERM MCQs
- MID TERM GRAND QUIZ

QUIZ

- QUIZ NO 01
- QUIZ NO 02

FINAL

- FINAL TERM MCQs

ALL IN ONE MCQs

MID TERM MCQs

1.	Natural estrogens deactivated by.....	Glucuronidation
2.	Insect virus that causes over expression of genes in molecular biology-	Baculo virus
3.	Acute toxins	All
4.	By using recombinant technologies scientists are now producing	Insulin
5. are combustible materials, containing within themselves all oxygen needful for their combustion, which burn but do not explode, and function by producing gas which produces an explosion	Propellants or low explosives
6.	-----are types of waste stabilization pond used for biological treatment of industrial and domestic wastewater	Facultative lagoon
7.	PAH-containing fractions, by animal test systemsevidence have been obtained that PAH containing	skin painting, lung implantation)
8.	Pentane is utilized as ain the preparation of phenol	foaming
9.	Polystyrene, as a propellant for aerosol sprays, as a filling of lowtemperature-----, and as reference compound in gas chromatography.	thermometers
10.	Herbicide resistant plants	pests
11.	Average temperature of ocean	1-3°C
12.	Which ofdoes not use to make vessel of biofilters	may be formic sheet
13.	Which of the following is not fate of water	may be generation of aerosol
14.	Which of the following does not classify as a substitution material.-----	other than those options) materials is a major potential avenue for the environmental biotechnology
15.	Which of the following statement about desulphurization of oil and coal is false-----	?????????
16.	Metals are released into the environment by all of the following except-	Earthquake
17.	When facultative pond receives raw sewage they are calledponds.	primary pond
18.	Which of the following is not linked to biomagnifications	

19.	----- is the presence of contamination in the environment which harm the environment.	Pollution
20.	Chlorinated polycyclic aromatic hydrocarbons (CL-PAHs) are group of compound with two or more aromatic rings and one or more ----- atoms are attached to the ring system	Chlorine
21.	Making the compound more polar and easily cleared from the blood by the -----.	Kidney
22.	Herbicide resistant plants -----	???????
23.	----- is the degree to which a chemical substance or a particular mixture of substance can damage an organism.	Toxicity
24.	----- is the application of biotechnology for solving environmental problems.	Environmental biotechnology
25.	In the soil, a -----has basically four possible destinations:	pollutant
26.	Bio substitution are:	1-Biofuels, 2-Polymers 3-Biodegradable
27.	A strain of Pseudomonas putrid known to-----	degrade PCBs
28.	The insect virus,, has been shown to be the method of choice for the over , expression of genes in many applications of -----	Baculovirus. molecular biology
29.	Methogenic constortio of over 100 bacterial clone with the capability to digest -----,	terephthalate
30.	Insertion of foreign DNA in the vector resulting in the loss of the future ...	marker gene
31.	In the Inhofe tank, settling occurs in the upper compartment	settling compartment.
32.	The septic tank can be a single-chamber tank or a two-compartment tank-----,	called an Inhofe tank
33.	For land base application soil type best suited to biotehnological intervention are	Sand and gravel
34.	Which of the following is not linked to biomagnification -----	?????????
35.	Which of the following is not fate of water	may be generation of aerosol
36.	Which of does not use to make vessel of biofilters	may be formic sheet
37.	Preliminary treatment involves the removal of coarse	solids only
38.	Attack by insect not only cause damage to the plant but also provide route ...	for bacterial or fungal infection
39.	In the Inhofe tank, settling occurs in the upper compartment	settling compartment
40.	The septic tank can be a single-chamber tank or a two-compartment tank	called an Inhofe tank
41.	Why frogs are helpful as bioindicator--- -----	Frogs are also Bioindicators; influenced by changes that take place in their freshwater and terrestrial habitats
42.	Which of the following is not linked to biomagnifications	...(other than those) • long-lived, • mobile, • soluble in fats, • biologically active
43.	Which of the following is not fate of water	may be generation of aerosol
44.	Which of does not use to make vessel of biofilters	may be formic sheet
45.	A strain of Pseudomonas putida known to -----	degrade PCBs
46.	In the soil, a pollutant has basically -----possible destinations: retention in the soil matrix, retention by the plants, appearance in the underground water and collection by underdrains	four
47.	In the Imhoff tank, settling occurs in the upper compartment	settling compartment

48.	septic tank can be a single-chamber tank or a two-compartment tank called	an Inhofe tanks
49.	-----which receive raw sewage is also known as primary ponds	Facultative ponds
50.	A strain of -----putrid known to degrade PCBs	Pseudomonas
51.	Mere a gene is one of ainvolved in bacterial detoxification of mercury, and is the one coding for the enzyme, mercuric ion reeducates, which convertsfrom an ionic to a.....	cluster of genes mercury volatile form
52.	----- also known as microalgae, are similar to terrestrial plants in that they contain chlorophyll and require daylight to live and develop	Phytoplanktons
53.	-----are microscopic animals living near to the surface of the water body. They are poor swimmers, instead relying on tides and currents as a transport mechanism. They feed upon phytoplanktons, bacterioplanktons, or detritus (i.e. marine snow).	Zooplanktons
54.	Thereleased in air by the processes of weathering, erosion and volcanic activity	metals
55.	The nature of the soil or water which harbors thecan have a major effect on the actual expressed end-result.	pollution
56.	Bio filter consists of a relatively large vessel or container, typically made of cast concrete, metal or	durable plastic
57.	Wastewater is applied to the soil, supplying water and nutrients necessary for-----	plant growth.
58.	Frog are bio indicator by.....	Change in fresh and terrestrial
59.	Na ⁺ /H ⁺ antiport,in opposite directions across a membrane	the transport of sodium and hydrogen ions
60.	Attack by insects is cause.....	micrococcus lentos
61.	Fundamental requirements are	all of given above
62.	Second strategy is usually	plasmid
63.	In the Inhofe tank, settling occurs in the	upper compartment
64.	Facultative ponds which receive raw sewage is also known as primary ponds.....	Retention by the plants
65.	Septic tanks are also a form of,,,,,,,,, treatment	primary
66.	Due to continuous arrival of food in the form of BOD to the aeration tank, bacteria grow and reproduce continuously.	If an indefinite population growth

QUIZ NO:1

1.	Biological system may be used to clean up pollutants which of the following... attributes must be present in the pollutants.	It should be highly toxic
2.	Halophiles are extremely important in environment biotechnology these are microorganisms that survive in highly saline environment . they do so by ensuring that- ----.	Their cytoplasm contains a higher concentration of solutes than their surroundings

3	Glyphosate (herbicide) is analyze of phosphenol pyruvate and inhibits the enzyme, the plants that gave the best result were -----.	Petunias
4	Lichens are used as bioindicators to monitor ----- quality.	Air
5	Microorganisms are now being used for the removal of pollutants from environment . all of the following statements in this regards are true except-----.	The tolence degradation pathway and p-cumate catabolic pathway are coded by genes present on the same operon.
6	In bacteria genetic transfer of materials occurs through -----.	Plasmids
7	Which statement about endocrine disrupters is true-----.	Feminization of male fish has occurred due to increased levels of oestrogen in water ways,
8	Plants have been produced using the Ti plasmid transfer system of the bacterium.	Agrobacterium tumefaciens
9	The plant pathogen that is used to increase the resistance of plant to disease is -----.	Erwinia Carotovora
10	Living organisms may be used to define the characteristics of biosphere , those that are used to get quantitative information on the quality of the environment are known as -----.	Biomonitors
11	The removal of pollutants by plant that breaking down into compounds that can be vaporized is known as -----.	Degradation, phytovolatilisation, phytosorption
12	Planktons are often used as indicator of water pollution, many planktons reproduce at increased rate in lakes when there are high centralization of -----.	Phosphorus and nitrogen

GRAND QUIZ MID TERM 2020

- freshwater species *Chlamydomonas reinhardtii* was sensitive to _____ all
- which of the following factors contribute to the increase in the death rate of the pathogenic microorganisms _____ **high DO concentrations and an increase in Ph**
- Plants are susceptible to bacterial pathogens such as *Erwinia carotovora*, which produces enzymes capable of degrading its _____ **cell walls.**
- The average oceanic temperature is around _____ **1–3°C**
- Which of the following bacteria causes crown gall disease _____ **Agrobacterium tumefaciens**
- Which zone is essential in the treatment line for biological removal of phosphorus _____ **both of the above**
- Salt tolerance in tomatoes has been established by introducing genes involved inantiport, the transport of sodium and hydrogen ions in opposite directions across a membrane _____ **hydrogen and sodium**
- Those species which live in higher KCl levels are known as _____ extremophiles _____ **halophile**
- The process of expression of foreign genes in a plant is called _____ **Gene expression**
- The removal of pollutants by plant that breaking down into compounds that can be vaporized is known as -----, _____ **Degradation, phytovolatilisation, phytosorption**
- The removal of the organic matter in the secondary stage is carried out through biochemical reactions undertaken by. _____ **microorganisms**
- Enzyme used in PCR is _____ **DNA Polymerase**

13. in facultative aerated lagoons oxygen is supplied by mechanical equipment called aerators. _____ **aerators**
14. denaturation step in PCR usually occur at which temperature? _____ **95 °C**
15. Is thermophilic microorganism from which polymerase has been isolated and used for PCR purpose. _____ **Thermus aquaticus**
16. many planktons at an increased rate in lakes when there are high centralization of **BOTH of the above**
17. in bacteria the most likely candidates for genetic transfer are.. _____ **both of the above**
18. the first working draft of the human genome sequence was published in which year ? _____ **2001**
19. which of the following is considered as health threatening microorganism of water
_____ **Vancomycin-Resistant Enterococcus**
20. Halophiles are extremely important in environment biotechnology these are microorganisms that survive in highly saline environment . they do so by ensuring that--- _____
- Their cytoplasm contains a higher concentration of solutes than their surroundings
21. DNA is precipitated by _____ **Alcohol**
22. Genomic library are very useful to look for a specific Sequence of _____ **DNA**
23. Typically the soil types best suited to biotechnological interventions are _____ **sands and gravels**

24. Which kind of porous medium is used in surface flow wetland_____
25. Which of the following chemicals is involved in the detoxification of the metals?
26. which of the following contaminants are rich in trichopria tetrat _____ **Phosphorus**
27. During nitrification PH level ?_____
28. Zooplanktons are microscopic ?
29. Wolffia globosa is an important tool for showing sensitivity and contamination._____ **cadmium**
30. Multicellular organism cannot tolerate temperature...._____ **50 ° C**
31. In eukaryotes the first product of transcription form DNA is ...
32. Bacillus thuringiensis tends to use codons richer in then the plant cells into which the gene is placed._____ **thymidine and adenine**
33. Bacteria have also adapted to degrade man-made organics called .
34. Polychlorinated biphenyls (PCBs) are xenobiotics having high level of
35. Biological treatment are not best suited to use in which type of soil .?
36. Optimum PH for local environment conditions lies in the range of? _____ **6.5–7.5**
37. Which of the following treatment system is adopted for removal of biodegradable organic matter form domestic sewage? _____ **aerobic biofilm reactors**
38. The sequence recognized by restriction enzyme is known as..._____ **recognition a site**
39. High rate of ponds usually receive a high load per unit surface area?
40. Which of the following method may be employed to improve the efficiency of pollutant degradation by a bacterium without the use of genetic engineering?
41. Which of the following technique is most suitable for the detection of RNA
42. Which of the following agents should be removed from tertiary level of water treatment level?
43. Microbes and enzymes typically function at _____ **lower temperatures and pressures.**
44. Which of the following agent are used to support the formation of biofilm in low rate tricking filter?
45. Transgenic plants?
46. Which of the following chemical is removed from activated of sludge with biological nitrogen removal process?
47. The mechanism of separation of the particles with a density greater than sewage is adopted in ...
48. The first bio tech based method of odor control was applied in..
49. Which gas is produced from up flow anaerobic sludge blanket reactor system?
50. The repeats flanking the T-DNA of agrobacterium tumefaciens are known as....
51. What is the main objective of maturation ponds?
52. In bacteria genetic transfer of material occur through ...
53. Which of the following technique is most suitable for the detection of presence gene product.
54. A plasmid can be considered as a suitable cloning vector if?
55. which of the following is not characteristic of a transgenic crop?
56. What will be the sequences of application of waste water in wetlands in rainy season.
57. Main purpose of growing non food crop is to get commercially?
58. Which of the following group is now recognized as forming a distinct evolutionary line.
59. Restriction enzymes are enzymes
60. Which kind of filter is used in septic tank?
61. applications of the system overland flow is applicable to the ..._____ **plain area**
62. bacillus thuringiensis tends to used codons richer in the plant cell into which the gene is placed.
63. generally the local environmental conditions required would ideally offer a temperature of.- **20–30 ° C**
64. Which of the following statement is false?
65. The existence of microbes capable of surviving in extreme environments has been known since the.. _____ **1960s**

66. *mer B* codes for which enzyme _____ **lyase**
67. a bacterial strain known to degrade PCBs is? _____ ***Pseudomonas putida***
68. lichens are used as bioindicators to monitor Quality _____ **air**
69. Extremozymes capable of functioning below pH1 have been isolated from these structures in some ...species _____ **acidophile**
70. How many practical problems associated with GE of plants which make them more difficult to manipulate than bacteria _____ **2**
71. Of all soil which bacteria, seem to have the most highly developed ability to adapt quickly to new carbon sources _____ ***Pseudomonads***
72. are able to transfer genetic material between susceptible cells _____ **eukaryotic viruses**
73. Which this bacterium would later make possible the widespread use of a revolutionary technology, the polymerase chain reaction (PCR) _____ ***Thermus aquaticus***
74. A bacterial gene encoding pentaerythritol tetranitrate reductase, an enzyme involved in the degradation of explosives, has been transferred into _____ **tobacco plant**
75. biological treatments are not best suited to in which type of soils _____ **all of the above**
76. The oestrogen is degraded completely to thus presenting a plausible method for water polishing prior to consumption. _____ **carbon dioxide and water**
77. Of all soil bacteria seem to have the most highly developed ability to adapt quickly to new carbon sources. _____ ***Pseudomonads***
78. *Ralstonia eutropha*, containingin its backbone, _____ **Sulphur**
79. A use of thermophilic enzyme is seen in the application pfu polymerase for PCR . pfu stands for _____ ***Pyrococcus furiosus***
80. Reporter genes can only be a guide to the process of **transcription and translation** occurring in the cell _____ **both b&c**
81. Hyperthermophiles work at temperatures above _____ **85c**
82. Many surface structural proteins in halophiles require severely elevated concentrations of _____.
83. Isolated samples of common place proteins, like egg albumin, are irreversibly denatured well at which temperature? _____ **blew 100c**

84. Bryophytes are frequently used to monitor _____ . **air contamination**
85. The retention time of the solids in the system is called? _____ **sludge age**
86. Planktons are often used as indicators of water pollution. Many planktons reproduce at an increased rate in lakes when there are high centralizations of ____ and _____. **phosphorus and nitrogen.**
87. When the bacteria starts to use organic material from the cellular material of extended aeration system, which kind of gas is produced ?
88. The removal of the organic matter in the secondary stage is carried out through biochemical reactions, undertaken by.
89. Imhoff tanks, are basically _____ tanks? _____ **sedimentation**
90. Plankton also plays an important role in biological deterioration _____ **organic matter**
91. In bacteria, the most likely candidates for genetic transfer are _____. Bacteriophage
92. Bacteria have also adapted to degrade man-made organics called _____ **xenobiotics.**
93. Which of the following is not a characteristic of a transgenic crop?
94. What is the level of pH at which precipitation is done for removal of pollutants like phosphorus ?
95. Gene is expressed, preceded by a strong promoter, most commonly the '35S' promoter, obtained from _____. **Agrobacterium tumefaciens**
96. What is the main application of Biomimetics?
97. Which kind of plant genera are used in sub-surface flow system?
98. High rate ponds are conceived in order to maximize _____ production?
99. Species found in the deep ocean volcanic vents known as 'black smokers' can tolerate _____?
100. T-DNA on Ti plasmid is flanked by a direct repeat of _____. **24bp**
101. What is the efficiency of maturation ponds for the removal of pathogenic organisms? _____ **99.99%**
102. Which statement about endocrine disruptors is TRUE?
103. In sub surface flow system rhizomes and roots are adjacent to which condition? _____ **Aerobic**
104. Glyphosate' (herbicide) is an analogue of phosphoenol pyruvate and inhibits the enzyme 5enolpyruvylshikimate-3-phosphate synthase. The gene coding for this enzyme has been isolated and inserted into plants which then exhibited an increased resistant to the herbicide. The plants that gave the best results were: _____ **Petunias**

105. Microorganisms are often used as health indicators of aquatic and terrestrial ecosystems. e.g., Some microorganisms when exposed to cadmium and benzene contaminants produce _____ proteins, which can be used as early warning signs _____ **stress**
106. To design production systems which avoid the potential for environmental contamination is the challenge of _____. **Green chemistry**
107. *Pyrolobus fumarii*, optimum temperature for reproduction is _____? **105 c**

- BT503 QUIZ-2

1. Which of the following method for removal of pathogenic organisms do not need chemical products of energy , but require large areas. _____ **Maturation ponds**
2. Free water in the sludge can be removed by -----, _____ **Gravity**
3. Which zone is essential in the treatment line for biological removal of phosphorus, aerobic or anerobic. _____ **Both**
4. A process In sludge management for preparation for dewatering is known as --- _____ **Dewatering**
5. Vitrification uses ----- temperature for fuse contaminated material. _____ **High**
6. The sludge production is a function of the waste water treatment system used for the -----
-
--. _____ **Liquid phase**
7. ----- is very effective agent for the removal of pathogens. _____ **Ozone**
8. Lime stabilization is used in treat ----- sludge. _____ **All**
9. Thermal decomposition process by oxidation is known as -----, _____ **Incineration**
10. For which of the following waste water treatment system the equipment depends on the post treatment process used. _____ **Rapid infiltration**
11. Which of the following process does not introduce chemical products into the liquid. _____ **Membranes**
12. A sludge with a level of dry solids of 2% has water content of -----, _____ **98%**
13. Which of the following method for pathogen removal affects the reproduction of pathogenic agents. _____ **UV Radiations**
14. Gamma radiations are used for -----, _____ **Conditioning**
15. Thickening in sludge management is removal of -----, _____ **Water**
16. Most significant temperature for bio-remediations is ----- _____ **20-30°C**

FINAL TERM MCQs

1. What is not true about bio scrubbers?.....**Remove toxic metals.**
2. Following is true about imhoff tank used in anaerobic filter system?.....**Can be a single-chamber tank or a two-compartment tank.**
3. Explosives of characterized by presence of _ group?.....**Nitro.**
4. The term "endophytes" is usually used to denote microorganisms?.....**Non-Pathogenic.**
5. UASB stands for?.....**Upflow anaerobic sludge blanket (UASB) reactors.**
6. Facultative ponds which receive raw sewage is also known as? **Primary ponds.**
7. The bio scrubber is not itself truly a biological treatment system, but rather a?
.....**Highly efficient method of removing odour components by dissolving them.**
8. Biodiesel is not derived from?**Algae.**
9. An aquatic plant?**Macrophyte.**
10. Important factors to be considered when evaluating and selecting unit operations and processes except?**Sterilization of vessels.**
11. Dioxins released as by-products in a number of chemical processes?.....**Do not pose threats to environment.**
12. Nonspecific enzymes are?**oxygenase's.**
13. Wastewater is applied to the soil, supplying water and nutrients necessary for plant growth. Which is not true?**Generation of aerosols.**
14. Which is not used regarding desulphurization of coal?**Psychrophiles.**
15. Suitable temperature is?**20—30C.**
16. Statement about phytoremediation is false?
17. What is false about Collection stage?**This is the stage when solid waste is transported to the final disposal site.**
18. False statement about on site disposal of waste?**Waste volumes are large.**
19. Which of following does not use to make vessel of biofilter?**Formic Sheet.**
20. Preliminary treatment involves the removal of?.....**Coarse Solid.**
21. In bacteria genetic transfer of materials occurs through?**Plasmid.**
22. Wolffia globosa is an important tool for?.....**Cadmium.**
23. Optimum PH for local environment conditions lies in the range?.....**6.5—7.5.**
24. _____uses High temperature for fuse contaminated material..... **Vitrification**
25. A step in the development of biosensors is?.....
.....**The immobilization of the biological component at the transducer surface.**
26. Associations of fungi with roots of vascular plants? **Mycorrhizae.**
27. The ability of a single compound to be degraded can be affected by the presence of other contaminants? ... **Cometabolism.**
28. Which is true for Environment Biotechnology?
..... **enhance or optimize conditions for existing biological systems to make their activities happen faster or more efficientl'ß**

29. Thermophile thrive at temperatures above?**45C.**
30. _____ are compounds which are man-made..... **Xenobiotic**
31. Natural estrogens are deactivated in humans by? **Glucuronidation.**
32. Collection of total Genomic DNA from an organism? **Genomic libraries.**
33. _____ refers to how pollutants enter a food chain..... **Bioaccumulation**
34. Which statement about Bioscrubber is FALSE? **They are useful for the removal of toxic metals**
35. Which of the following is NOT a possible destination of the pollutant in the soil?..... **appearance in surrounding air**
36. The presence of metals in environment may be detected visually by the use of bacteria. One such example is *Vogesella indigofera* that gives an idea of metal contamination by producing..... **Coloured pigments**
37. Which statement about chlorinated aliphatic hydrocarbons is correct?..... **oxidative dehalogenation of CAHs is carried out by facultative aerobes**
38. In the conventional activated sludge system. continuous arrival of food in the form of BOD to the aeration tank, leads to rapid and continuous bacterial growth. All of the following problems caused by increased bacterial growth. Except..... **the overall efficiency of the process is enhanced**
39. Which kind of the technique are suitable for bioremediation..... **In-situ**
40. Unlike other marine species, _____ are characteristically untroubled by biofouling and study of their skin have established that its unique texture coupled with its inherent antimicrobial properties help keep them clean of fouling organisms..... **Sharks**
41. Which plant is used as a model to protect from various agents?..... **Tobacco plant**
42. The airflow in the submerged aerated biofilter is always _____ while the liquid flow can be **upflow, downflow**
43. Which of the following approaches do not remove the pollutants but only immobilize the pollutants? **phytostabilization**
44. The _____ product of pollutant may be more harmful than the original pollutant itself, therefore it is important to understand the chemistry of the pollutant..... **breakdown**
45. Among the first synthetic organic chemicals to create environmental problems were **Detergents**
46. Immobilization refer to the removal of contaminants, typically metals, by means of _____ by various microbes or plants species.. **adsorption**
47. Which of the following factors has no effect on the execution and implementation of environmental technology? **health of the general population**
48. Dioxins have many congeners. The most toxic is _____ which is thought to be the most poisonous synthetic chemical..... **TCDD (tetrachlorodibenzo-p-dioxin)**
49. How much arsenic can be accumulated by using *Pteris vittata*?..... **2-3%**
50. Which of the following methods are best suited to instances of relatively localized pollution within a site, typically in 'hot-spots' of medium to relatively high concentration which are fairly near to the surface..... **Ex-Situ**
51. For land based applications, the soil type best suited biotechnological inventions are **Sand and Gravel**
52. Plants containing the novel DNA grow, a gene coding is frequently for..... **all of the above**

53. Deliberate transfer of a gene from one organism to another is called _____ **Foreign gene**
54. Western blotting technique is used for the detection of _____ **Protein**
55. The term “endophytes” is usually used to denote ____ microorganism..... **non-pathogenic**
56. Which of the following have the innate ability to degrade hydrocarbons contaminants through metabolic action and biosurfactant production..... **hydrocarbonoclastic bacteria (HCB)**
57. What is false about poor biodegradation of hydrocarbons?..... **Easily degraded by enzymatic attack**
58. Liquid biofuels are of considerable importance due to
Liquid fuels are of considerable importance due to the relative ease of transport and handing, and inherent controllability of combustion
59. Which process used in the natural process of sludge dewatering..... **Drying beds, sludge lagoons**
60. In aerobic Cometabolism of CAHs ---- is required ----
Successful Cometabolism can be achieved by ensuring that primary substrate is well in excess of that needed to overcome toxicity from the CAH or its transformation products

- 1- Insect virus that causes over expression of genes in molecular biology _____ **bacilo virus**
- 2- Acute toxins..... _____ **all**
6. By using recombinant technologies scientists are now producing..... _____ **insulin**
- 7.....are combustible materials, containing within themselves all oxygen needful for their combustion, which burn but do not explode, and function by producing gas which produces an explosion..... _____ **Propellants or low explosives**
- 8- are a type of waste stabilization pond used for biological treatment of industrial and domestic wastewater..... _____ **Facultative lagoon**
- 9- PAH-containing fractions, by animal test systemsevidence has beenobtained that PAH containing..... _____ **(skin painting, lung implantation)**
- 10-Pentane is utilized as ain the preparation of phenolic..... _____ **foaming**
- 11-Polystyrene, as a propellant for aerosol sprays, as a filling of low-temperature-----, and as reference compound in gas chromatography..... _____ **thermometers**
- 12-Reintroduction of these -----bacteria to the polluted sites should give them an advantage over the indigenous bacteria as they would be better suited to survive and remediate the contamination. _____ **trained**
- 13-The DNA construct contains -----which are complementary to the plant DNA to enable the inserted piece to recombine into the plant genome..... _____ **regions of DNA**
- 14-Attack by insects not only causes damage to the plant but also provides a route _____ **for bacterial or fungal infection.**
- 15-Bacteria which Thrive at temperatures above 45°C is called as ----- _____ **Thermophiles**
- 16-Bacteria which Thrive at temperatures above ~85°C. is called as _____ **Hyper thermophiles**
- 17- Which attribute of pollutant is not linked to bio magnification -----
_____ **longlived, • mobile, • soluble in fats, • biologically, active other than these option**
- 18-Following substances cannot use to make the vessel of bio filter **concrete, metal or durable plastic, (other than these)**
- 19-Following cannot be adopted to increase the efficiency of phosphorus removal by activated sludge method **?????**

20- Following is true about Imhoff tank used in anaerobic filter system _____ (see in midterm)

21- When facultative ponds receive raw sewage, they are also called **primary** ponds.

22- In general, enzymatic biosensors are based on -----enzymes by different classes of _____ compounds. **the selective inhibition of specific**

23. Which enzyme are used in leather industry **Traditionally, pancreatic enzymes were employed**

24. Explosives are characterized by presence of _____group??????

25. Which statement about chlorinated hydrocarbons is correct **fixation of carbon by phytoplankton.**

Main use of DDT other than fighting crop insects effective in controlling the Anopheles **malari**

26. mosquito **a**

24- The term "endophytes" is usually used to denote **non-pathogenic** microorganisms.

28. The steps of solid waste management are listed below what is correct -----

29. Statement about phytoremediation is **false**

30- State about sampling for situ monitoring is true

31 Following property of hydrocarbon does not contribute poor biodegradation

32. Toxicity represents the potential damage to life and can be both short and long term. It is related to **Type of the pollutant, • Concentration, • The time of**

33- In order for bio magnification to occur, the pollutant must be: **• Long-lived, • Mobile, • Soluble in fats, • Biologically active.**

34- bio filters can reduce odour release by **95% or more**

35- For higher efficiencies of phosphorus removal, effluent polishing methods can adopted: **Addition of coagulants**

36- In the Imhoff tank, settling occurs in the..... **upper compartment**

37- In the soil, a pollutant has basically -----possible destinations: **four**

38- Facultative ponds which receive raw sewage is also known as**primary ponds**

39- The bio scrubber is not itself truly a biological treatment system, but rather a highly efficient method of removing odour components by dissolving them.

40- In the Imhoff tank, settling occurs in the upper compartment _____ **settling compartment).**

41- Biodiesel is derived mostly from ---- _____ **vegetable oil**

42- DDT was of great benefit to humans in their fight against----- **malaria**

43- Two characteristics of chlorinated pesticides that led to great harm are

Their resistance to biodegradation and • their hydrophobicity Nitro (-NO₂)

44- A characteristic of explosives is the presence of -----groups.

45- Endophyte is micro pathogen-----

- 46- up flow anaerobic sludge blanket reactor stand for **UASB**
- 47- Water treatment accounts for **25%** of the total global environmental market.
- 48- Basic equipment required in Preliminary treatment involves screen, **grit chamber and flow meter**
- 49- UASB stands for -----**up flow anaerobic sludge blanket reactor**
- 50- Important factors to be considered when evaluating and selecting unit operations and processes except: **Sterilization of vessels**
- 51- What is false about final disposal of sludge in ocean? **It has beneficial uses.**
- 51- **Rhizodegradation** refers to the biodegradation of contaminants in the soil by edaphic microbes enhanced by the inherent character of the rhizosphere itself.
- 53- False about On-site disposal? **waste volumes are large**
54. . What is true about Biodiesel? **It is derived mostly from vegetable oils**
55. The term “endophytes” is usually used to denote **non-pathogenic microorganisms.**
56. A tumor-like growth, seen as a crown gall in plants. **Agrobacterium tumefaciens**
57. Dioxins released as by-products in a number of chemical processes **Do not pose threats to environment**
58. Explosives use -----functional group **nitro**
59. Aerobic Co-metabolism of -----NADH to provide the 2H **CAHs-II requires**
60. What is false about poor biodegradation of hydrocarbons? **Easily degraded by enzymatic attack**
61. Nonspecific enzymes are **oxygenases** that initiate the oxidation of hydrocarbons such as methane or toluene.
62. Western blotting is used to detect----- **proteins**
63. Due to continuous arrival of food in the form of BOD to the aeration tank, bacteria grow and reproduce continuously. If an indefinite population growth were allowed...-----following problems arised except **option D will be correct option**
64. Wastewater is applied to the soil, supplying water and nutrients necessary for plant growth. Which is not true? **Generation of aerosols**
- 65-Which statement is not true regarding desulphurization of oil and coal? **D**
- 66.The metals release in air by all following process except-----
. --- **Earthquake**
67. mer A gene codes for the enzyme, -----
mercuric ion reductase
- 68-What is true regarding zooplankton? **Rely on tides and currents as a transport**
- 69- Facultative ponds which receive raw sewage is also known as **primary ponds**
- 70 - In the soil, a pollutant has all the possible destinations except?**Option d will Be correct**
- 71.What is not true about bio scrubbers? **Remove toxic metals**
72. One such recombinant is a plant where the fatty acid composition in the seed has been modified to produce triacylglycerol's containing elevated levels of trierucinic acid suitable for use in the polymer industry. **Arabidopsis thaliana**

73. Unlike other marine species, sharks are characteristically untroubled by -----and studies of their skin have established that its unique texture coupled with its inherent antimicrobial properties help keep them clean of fouling organisms. **bio fouling**

74.) Factors related to bio magnifications except -----**source**

1.....is the branch of biotechnology that addresses environmental problems, such as the removal of pollution, renewable energy generation or biomass production, by exploiting biological processes (nature.com)._____ **Environmental biotechnology**

2.The goals of Environmental biotechnology can be achieved in..... ways._____ **two**

3.key points for environmental biotechnology interventions._____ **Three(manufacturing process,waste management,pollution control)**

4. The market will have grown to.....US dollars by 2025._____ **7400 billion**

5.Water treatment accounts for.....of the total global environmental market._____ **25%**

6.In general the use of biotechnology for environmental management relies on..... **mesophilic micro-organisms.**

7.Extremophiles could provide a way of developing alternative routes to many **conventional chemicals or materials....**

8.Thermophiles organisms thrive at temperatures above..... **45°C.**

9.An optimal temperature for the existence of hyperthermophiles about.... **~85°C**

10.Thermus means **aquaticus....**

11.Taq Polymerase is a **DNA Polymerase of Thermus aquaticus.**

12.Pfu Polymerase DNA Polymerase cloned from....**Pyrococcus furiosus**

13.Average oceanic temperature is around..... **1–3°C**

14.....survive intensely saline environments, such as exist in natural salt lakes or salt evaporation ponds.**Halophiles**

15.Acidophiles thrive in the conditions of..... , typically below. low **pH,5**

16.Extremozymes capable of functioning below..... have been isolated...**pH 1**

17..... flourish in environments at pH9 or more such as soda lakes and heavily alkaline soils.**Alkaliphiles**

18.Greek word 'xenos'meaning **foreign.**

1. Reintroduction of these **"trained"** bacteria to the polluted sites should give them an advantage over the indigenous bacteria as they would be better suited to survive and remediate the contamination.
2. The DNA construct contains **regions of DNA** which are complementary to the plant DNA to enable the inserted piece to recombine into the plant genome.
3. Attack by insects not only causes damage to the plant but also provides a route **for bacterial or fungal infection.**
4. Bacteria which Thrive at temperatures above 45°C is called as **Thermophiles**
5. Bacteria which Thrive at temperatures above ~85°C. is called as **Hyper thermophiles**

6. Following factor is linked to toxicity of pollutants.....??????
7. Which attribute of pollutant is not linked to bio magnification long-lived, • mobile, • soluble in fats, • biologically active other than these option
8. Following substances cannot use to make the vessel of bio filter concrete, metal or durable plastic,(other than these) 9. Following cannot be adopted to increase the efficiency of phosphorus removal by activated sludge method ?????? 10. Following is true about imhoff tank used in anaerobic filter system (see page no 138 midterm)
11. When facultative ponds receive raw sewage, they are also called primary ponds.
12. In general, enzymatic biosensors are based on the selective inhibition of specific enzymes by different classes of compounds.
13. Which enzyme are used in leather industry Traditionally, pancreatic enzymes were employed
14. Explosives of characterized by presence of _____group??????
15. Which statement about chlorinated hydrocarbons is correct fixation of carbon by phytoplankton.
16. Main use of DDT other than fighting crop insects effective in controlling the Anopheles mosquito malaria
17. The term “endophytes” is usually used to denote non-pathogenic microorganisms.
18. The steps of solid waste management are listed below what is correct (see the final term pts page no 396...)
19. Statement about on-sito disposal of waste is incorrect

Advantages: • Bins are potentially a highly hygienic and sanitary management method; and • Final disposal of waste is well away from dwelling areas. Constraints: • Collection, transportation and human resources are required; • System takes time to implement; and • Efficient management is essential. (Other than these)

20. Statement about phytoremediation is false (see the final term pts page no 392...)
21. State about sampling for situ monitoring is true (see the final term pts page no 182...)
22. Following property of hydrocarbon does not contribute poor biodegradation (see the final term pts page no 708...) 23. In planning studies for the implementation of the wastewater treatment, the following points must be clearly addressed:
• Environmental impact studies on the receiving body • Treatment objectives • Treatment level and removal efficiencies
24. Toxicity represents the potential damage to life and can be both short and long term. It is related to
• Type of the pollutant, • Concentration, • The time of
25. In order for bio magnification to occur, the pollutant must be:• Long-lived, • Mobile, • Soluble in fats, • Biologically active.
26. bio filters can reduce odour release by 95% or more
27. For higher efficiencies of phosphorus removal, effluent polishing methods can adopted:
Addition of coagulants
28. In the Inhofe tank, settling occurs in the..... upper compartment
29. In the soil, a pollutant has basically four possible destinations:
• Retention in the soil matrix • Retention by the plants • Appearance in the underground water • Collection by Under drains
30. Facultative ponds which receive raw sewage is also known asprimary ponds

31. The bio scrubber is not itself truly a biological treatment system, but rather a highly efficient method of removing odour components by dissolving them.
32. . In the Imhoff tank, settling occurs in the upper compartment (settling compartment).
33. . Biodiesel is derived mostly from---- vegetable oil
34. . DDT was of great benefit to humans in their fight against----- malaria
35. . Two characteristics of chlorinated pesticides that led to great harm are
• Their resistance to biodegradation and • their hydrophobicity
36. . A characteristic of explosives is the presence of -----groups. Nitro (-NO₂) 37. .
Endophyte is micro pathogen
38. . up flow anaerobic sludge blanket reactor stand for (UASB)
39. Water treatment accounts for 25% of the total global environmental market.
40. Basic equipment required in Preliminary treatment involves screen, grit chamber and flow meter
41. UASB stands for -----up flow anaerobic sludge blanket reactor
42. Important factors to be considered when evaluating and selecting unit operations and processes except:
a) Process applicability, b) Applicable flow, c) Influent characteristics, d) Sterilization of vessels
43. What is false about final disposal of sludge in ocean?
a) After pre-conditioning, the sewage is disposed in the sea b) It has beneficial uses.
c) It gives pollution to oceans
44. Which statement is true about Site monitoring analysis sampling?
a) Sampling involves two distinct activities b) Does not define the objectives of the program
c) Characterize the samples in terms of description, location, batch number, size,
45. Rhizodegradation refers to the biodegradation of contaminants in the soil by edaphic microbes enhanced by the inherent character of the rhizosphere itself.
46. The correct sequence of Initial Steps in Solid Waste Management:
1. Identify the types of waste. 2. Identify the sources of waste. 3. Determine the potential health hazards from waste. 4. Determine the volume of waste generated
5. Identify safe collection method/s. 6. Identify safe transportation method/s.
7. Identify safe disposal method/s. All of these.
47. What is false about Collection stage?
a) Simply refers to how waste is collected for transportation to the final disposal site.
b) Should be carefully planned to ensure that storage facilities do not become overloaded.
c) Collection intervals and volumes of collected waste must be estimated.
d) This is the stage when solid waste is transported to the final disposal site
48. False about On-site disposal?
a) waste volumes are small, b) plenty of space is available, and c) waste is largely organic or recyclable.(biodegradable) d) waste volumes are large
49. What is true about Biodiesel? It is derived mostly from vegetable oils 50. The term “endophytes” is usually used to denote non-pathogenic microorganisms.
51. A tumor-like growth, seen as a crown gall in plants. Agrobacterium tumefaciens
52. What is false about dioxins?
53. a) Dioxins released as by-products in a number of chemical processes
54. b) The manufacture of PVC plastics c) carcinogenic d) Do not pose threats to environment
55. Explosives use nitro functional group
56. Aerobic Co-metabolism of CAHs-II requires NADH to provide the 2H
57. What is false about poor biodegradation of hydrocarbons?

- a) Complexity of the molecule b) Branched or aromatic rings are difficult to degrade c) Low water solubility. **d) Easily degraded by enzymatic attack**
58. Nonspecific enzymes are **oxygenases** that initiate the oxidation of hydrocarbons such as methane or toluene.
59. Western blotting is used to detect **proteins**
60. Due to continuous arrival of food in the form of BOD to the aeration tank, bacteria grow and reproduce continuously. If an indefinite population growth were allowed...-----following problems arised except a) The secondary sedimentation tank would become overloaded, b) The solids would not settle well c) They would start to leave with the final effluent... d) **option d will be correct option**
61. Wastewater is applied to the soil, supplying water and nutrients necessary for plant growth. Which is not true? a) Some liquid evaporates, b) Percolates into the soil, c) Absorbed by the plants... **d) Generation of aerosols**
62. Which statement is not true regarding desulphurization of oil and coal? a) washing pulverized coal and the use of fluidized bed technology b) Both organic and inorganic sulphur is present in coal c) Aerobic, acidophilic chemolithotrophs like Thiobacillus species, for desulphurization of the inorganic sulphur in coal. **d) Option d will be correct**
63. The metals release in air by all following process except a) Processes of weathering, b) Erosion c) Volcanic activity **d) Earthquake**
64. mer A gene codes for the enzyme, **mercuric ion reductase**
65. What is true regarding zooplankton? **Rely on tides and currents as a transport** 66. Facultative ponds which receive raw sewage is also known as **primary ponds**
67. In the soil, a pollutant has all the possible destinations except? a) Retention in the soil matrix b) retention by the plants c) appearance in the underground water **d) Option d will be correct**
68. What is not true about bio scrubbers? a) Removing odour components by dissolving them. b) Most appropriate for hydrophilic compounds **c) Remove toxic metals**
69. One such recombinant is a plant where the fatty acid composition in the seed has been modified to produce triacylglycerol's containing elevated levels of trierucinic acid suitable for use in the polymer industry. **Arabidopsis thaliana**
70. Unlike other marines species, sharks are characteristically untroubled by **bio fouling** and studies of their skin have established that its unique texture coupled with its inherent antimicrobial properties help keep them clean of fouling organisms.
71.) Factors related to bio magnifications except a) Mobile/transfer b) solubility in fats, c) biologically active **d) source**

BEST OF LUCK