

Module-4

Global Environmental Concerns (Concept, policies and case-studies)

1. Which of the following doesn't control aquifer behaviour?
a) **Wind conditions** b) Nature of the rock
c) Structural disposition d) Climate conditions like precipitation

2. An aquifer can hold water _____ and the state of water is _____.
a) Permanently – State of flow b) **Temporarily – State of flow**
c) Permanent – State of stagnancy d) Temporary – State of stagnancy

3. The quantity of water that can be withdrawn annually and also the rate at which this withdrawal could be made without adversely affecting the inventory of the aquifer is called _____.
a) Annual yield b) Percent yield
c) **Operational yield** d) Monthly yield

4. When an aquifer is used to artificially recharge by making it pass through an intervening layer, the aquifer acts as _____.
a) A cooling agent b) An aerating agent
c) An odour agent d) **A filter plant**

5. When would the dam become irrelevant?
a) When the rocks are strong b) When the rocks are impermeable
c) **When the rocks are porous** d) When the rocks are weathered to a certain extent

6. Which quality of rock should be known properly for the foundations of dams, reservoirs, etc.?
a) Colour knowledge b) Geological
c) **Hydrogeological** d) History of the formation of rocks

7. Groundwater is a source of trouble at which place?
a) Plains b) **Slopes**
c) Rivers d) Lakes

7. An associated protection of rising water-table is the development of _____.
a) Loss of nutrients b) Loss of good quality of water
c) **Salinity of water** d) Increase in turbidity

8. The root system of crops in water-logged areas get _____.
a) **Decomposed** b) Enriched with nutrients
c) Photosynthesised d) Growth inhibited

9. Which one of the following is an important heat trapping gas?
- a) Nitrogen b) Carbon monoxide
c) **Carbon dioxide** d) Hydrogen
10. How many cubic kilometers of land ice decrease in Antarctica since 2002?
- a) **100** b) 400
c) 500 d) 1000
11. Which one of the following is the reason for a sea level rise?
- a) Depression of sea water b) **Expansion of sea water**
c) Due to heavy rainfall d) Due to low rainfall
12. What is the full form of IPCC?
- a) **Intergovernmental Panel on Climate Change** b) International Panel on Climate Change
c) Intergovernmental Protocols on Climate Change
d) International Panel on Climate Conservation
13. What is the estimation range of the global mean sea level rise by the year 2100?
- a) 0-10 cm b) 4-45 cm
c) **9-88 cm** d) 14-123 cm
14. Which one of the following is a result of climate change?
- a) Adequate rainfall b) Pure air
c) **Deficiency of freshwater** d) Less soil pollution
15. How food production reduced due to climate change?
- a) Due to application of organic manures b) Due to modern technologies
c) **Due to increase in pests** d) Due to reduced in pollution
16. How climate change leads to conflicts in vulnerable regions?
- a) By shortage of human resources b) **By shortage of food and water**
c) By shortage of land d) By shortage of chemical manures
17. What happens when seasonal transmission of vector species due to climate change?
- a) **Increase the spread of diseases** b) Decreased the spread of diseases
c) Vector species itself die d) Vector species do not spread disease
18. Which one of the following can achieve Global Climate Change?

- a) World War-3
- b) Making unwanted policies
- c) Drinking less water than required
- d) **The training of researchers and health professionals**

19. In which year the Pacific Ocean led to the most serious death in coral ever known?

- a) 1993
- b) 1995
- c) **1997**
- d) 2000

20. What would have been the average temperature of Earth without greenhouse gases?

- a) 0oC
- b) -7oC
- c) -9oC
- d) **-19oC**

21. Ever since the industrial revolution, by how much has the average temperature of the Earth increased?

- a) 0.24oC
- b) **0.6oC**
- c) 1.2oC
- d) 1.8oC

22. How much of the sun's radiation energy is absorbed by the greenhouse gases to warm the planet?

- a) **75PW**
- b) 1750GW
- c) 1500MW
- d) 150TW

23. What is the emissivity of the Earth's surface?

- a) **0.457**
- b) 0.578
- c) 0.135
- d) 1.42

24. Which type of clouds is found in the highest altitude of the Earth's atmosphere?

- a) **Noctilucent**
- b) Cirrostratus
- c) Stratus
- d) Cirrus

25. What is the significance of the ionosphere?

- a) Aviation movements
- b) **High frequency radio transmission**
- c) Regulates weather
- d) All of the mentioned

26. What does the term "overcast" define?

- a) Phenomenon of indirect radiation exposure due to scattering
- b) Weather when cloud cover is equal to 8 oktas
- c) **Phenomenon of indirect radiation exposure due to scattering & Weather when cloud cover is equal to 8 oktas**
- d) None of the mentioned

27. What does ITCZ stand for corresponding to global wind patterns?

- a) Inner Tropospheric Convergence Zone b) **Inter Tropical Convergence Zone**
- c) Inner Tropical Continental Zone d) Inter Tropical Continental Zone

28. Which one of the following cause acid rain?

- a) Water pollution b) Soil pollution
- c) **Air pollution** d) Noise Pollution

29. What are two acids formed when gases react with the tiny droplets of water in clouds?

- a) **Sulphuric acids and nitric acid** b) Hydrochloric acid and nitric acid
- c) Sulfurous acid and acetylsalicylic acid d) Sulphuric acid and hydrochloric acid

29. What is the nature of acid rain?

- a) Withstanding b) Protecting
- c) **Corrosive** d) Balancing

30. Which of the following way acid rain affects the plants?

- a) By nourishing the nutrients from the soil
- b) By increasing the nutrients from the soil
- c) **By removing nutrients from the soil**
- d) By balancing the nutrients in the soil

31. What is the result of acid rain when it falls into water bodies?

- a) **The water becomes acidic** b) The water becomes pure
- c) The water increase its nutrients value d) The water increase its level

32. Which one of the way can prevent acid rain?

- a) Increase the emission of sulfur dioxide and nitrogen oxides
- b) **Decrease the emission of sulfur dioxide and nitrogen oxides**
- c) Increase in the emission of hydrochloride and phosphate
- d) Decrease in the emission of hydrochloride and phosphate

33. The Taj Mahal in India is affected by _____

- a) Fog b) **Acid rain**
- c) Water pollution d) Spoil Pollution

34. Which of the following is the best way to reduce acid rain in soil?

- a) By adding sulphur to the soil b) By adding nitrogen to the soil
- c) By adding oxygen to the soil d) **By adding limestone to the soil**

35. How can we control acid rain which is causing due to the exhaust fumes on the atmosphere by cars?

- a) By burning more fuels
- b) By using old engine vehicles
- c) By using ignition
- d) **By using catalytic converters**

36. Which is the most acidic in pH scale?

- a) **0**
- b) 7
- c) 10
- d) 14

37. Who was the first to use the phrase “Acid Rain”?

- a) **Robert Angus Smith**
- b) Ernest Flower
- c) Elmer Joseph Clark
- d) Christ Ralph

38. When was the “Clean Air Act” in United States came into force?

- a) 1950
- b) 1960
- c) **1970**
- d) 1980

39. Below which of the following pH is rain regarded as ‘acid rain’?

- a) 7
- b) 7.3
- c) **5.6**
- d) 6

40. Glass containers are generally not preferred for sampling rain water. Why?

- a) Glass containers are expensive
- b) Glass containers are not easy to maintain
- c) **Glass containers affect the pH of the rain water**
- d) All of the mentioned

41. Which of the following gases are main contributors to acid rain?

- a) Carbon dioxide and carbon monoxide
- b) Sulphur dioxide and carbon dioxide
- c) Sulphur dioxide and nitrogen dioxide
- d) **Sulphur dioxide and nitrous oxide**

42. What does the term “liming” mean?

- a) **Application of magnesium and calcium rich substances to soil**
- b) Erosion of calcium carbonate(lime) zones in soil
- c) Excessive growth of lemon trees in acid rain prone regions
- d) None of the mentioned

43. Which place in India receives the highest annual rainfall?
a) **Mawsynram** b) Cherrapunji
c) Siju d) Phyllut
44. Who discovered the phenomenon of acid rain?
a) George Brown b) James T. Stewart
c) **Robert Angus Smith** d) Charles David
45. Which of the following is/are natural contributor(s) to sulphur dioxide in the atmosphere?
a) Sea sprays b) Volcanic eruption
c) Decaying vegetation d) **All of the**
46. What is the pH required for the survival of aquatic animals and plants?
a) 7 b) 7.5
c) 6.5 d) **4.8**
47. Which of the following gases is responsible for the yellowing of the Taj Mahal?
a) Organic carbon b) Black carbon
c) Brown carbon d) **All of the mentioned**
48. What is the average concentration of ozone in the ozone layer of the atmosphere?
a) Nearly 100% b) Greater than 90%
c) Between 10-50% d) **Less than 10ppm**
49. Who discovered the ozone layer?
a) **Henri Buisson & Charles Fabry**
b) Carl Sagan & Charles Fabry
c) G.M.B Dobson
d) Carl Sagan & G.M.B Dobson
50. Which of the following devices can be used to measure ozone in the stratosphere from the ground?
a) Spectrometer
b) Photometer
c) **Spectrophotometer**
d) Spectro-ozonometer

51. The ozone layer absorbs what range of wavelengths of the sun's radiation?

- a) 0.80 nm – 1.50 nm
- b) **200 nm – 315 nm**
- c) 450 nm – 570 nm
- d) 600 nm – 750 nm

52. Who discovered the formation of ozone from photochemical reactions?

- a) **G.M.B Dobson**
- b) Sydney Chapman
- c) Carl Sagan
- d) Henri Buisson

53. Between what altitudes, is the ozone layer found in highest concentrations?

- a) 10-20km
- b) **20-40km**
- c) 40-55km
- d) 55-70km

54. Which of the following UV radiations is responsible for causing sun burns and skin cancer?

- a) UV-A
- b) **UV-B**
- c) UV-C
- d) All of the mentioned

55. In which season is the ozone found at its maximum level in the northern hemisphere?

- a) Winter
- b) Summer
- c) **Spring**
- d) Autumn

56. When was the ozone hole discovered?

- a) 1974
- b) 1964
- c) 1994
- d) **1984**

57. The ozone hole is a phenomenon that has occurred in:

- a) Arctic region
- b) Northern temperate region
- c) Southern temperate region
- d) **None of the mentioned**

58. Which of the following chemicals are responsible for the depletion of the stratospheric ozone layer?

- a) Refrigerants
- b) Propellants
- c) Foam-blowing agents
- d) **All of the mentioned**

59. What does EESC stand for in context of ozone depleting compounds?

- a) **Equivalent Effective Stratospheric Chlorine**
- b) Equivalent Effective Stratospheric Chlorofluorocarbons

- c) Equivalent Energy Saving Compounds
- d) Energy Effective Stratospheric Compounds

60. The Montreal Protocol bans the production of which of the following chemical substances?

- a) Chlorine, bromine, CFCs, freons
- b) Carbon tetrachloride, halons, trichloroethane, CFCs**
- c) CFCs, bromine, halons, freons
- d) CFCs, halons, freons

61. Eco-toxicology is the study of _____

- a) Chemical interactions of organism and environment**
- b) Physical interactions of organism and environment
- c) Thermal interactions of organism and environment
- d) Biological interactions of organism and environment

62. Hazard estimation in ecotoxicology is done based on _____

- a) Accumulation
- b) Bio-accumulation**
- c) SARA
- d) H W L

63. Eco-toxicology is based on _____ of chemicals.

- a) Chemical
- b) Physical
- c) Toxicological**
- d) Biological

64. Chronic toxicity is based on _____

- a) **NOEC**
- b) AOEC
- c) SOEC
- d) **QEOC**

65. According to TURI which tool is used for determining aquatic toxicity?

- a) P2SD
- b) P3SFD
- c) P2OASys**
- d) P20FR

66. Toxicity ranking from ToxPi is based on _____
a) **Suborganismal tests** b) Organismal test
c) P2SO d) EC100
67. _____ models provide ecotoxicity endpoint.
a) QASR b) **QSAR**
c) QAWS d) QSEA
68. _____ species is used as screening of chemicals.
a) Eisinia foetida b) Folsomia candida
c) Enchytraeus albidus d) **Zebrafish**
69. The fluoride concentration for prevention of dental caries is _____
a) **1mg/l** b) 2mg/l
c) 3mg/l d) 4mg/l
70. In which process, the fluoride content of water is raised?
a) Chlorination b) **Fluoridation**
c) Defluoridation d) Flocculation
71. Which of the following is not used as a fluoride compound?
a) Sodium fluoride b) Sodium silico fluoride
c) Hydrofluosilicic acid d) **Sodium fluoro carbonate**
72. Which of the following is the pure compound?
a) **Sodium fluoride** b) Sodium silico fluoride
c) Hydrofluosilicic acid d) Sodium fluoro
carbonate
73. As far as safer handling is considered, which of the following is used for fluoridation?
a) Sodium fluoride b) Sodium silico fluoride
c) **Hydrofluosilicic acid** d) Sodium fluoro
carbonate
74. What happens when water contains 8-20 ppm of fluoride concentration?
a) Blue baby disease b) **Crippling fluorosis**
c) Dental fluorosis d) Mottling
of teeth
75. The process of reducing the fluoride content from water is called _____
a) Chlorination b) Fluoridation
c) **Defluoridation** d) Flocculation

75 Which of the following is not used for defluoridation?

- a) Calcium phosphate
- b) **Copper sulfate**
- c) Alum
- d) Bone charcoal

76. At which temperature, the bone is calcinated during defluoridation with calcium phosphate?

- a) 100-200°C
- b) 200-300°C
- c) **400-600°C**
- d) 500-800°C

77. Which material is used in contact filters for the removal of fluorides?

- a) Calcium phosphate
- b) Copper sulfate
- c) **Synthetic tri-calcium phosphate**
- d) Bone

78. Which material is used for removing fluorides from hard water containing 3ppm of fluorides?

- a) **Lime**
- b) Copper sulfate
- c) Synthetic tri-calcium phosphate
- d) Bone charcoal

79. Fluorex is a special mixture of _____

- a) Di-calcium phosphate and carbon
- b) **Tri-calcium phosphate and hydroxyapatite**
- c) Di-calcium phosphate and phosphoric acid
- d) Tri-calcium phosphate and carbon

80. Acid rain means

- a. Heavy rain
- b. Drizzle
- c. **Any precipitation**
- d. None of these

81. The primary cause of acid rain around the world is

- a. Carbon dioxide
- b. **Sulphur dioxide**
- c. Carbon monoxide
- d. Ozone

82. Which of the following is a source of SO₂ in atmosphere?

- a. Volcanoes
- b. Thermal power plants
- c. H₂SO₄ manufacturing
- d. **All of these**

83. Acid rain is mainly influenced by

- a. Deforestation
- b. Agriculture
- c. **Presence of particulates**
- d. None of these

84. The P^H of unpolluted rain water [Acid rain water] is about

- a. 8.7
- b. 3.7
- c. **5.7**
- d. none of these

85. The PH of acid rain is

- a. **Less than 5.7**
- b. Less than 3.7
- c. Less than 2.7
- d. Less than 1.7

86. Which of the following is the source of NO₂ in the atmosphere?

- a. Automobile exhaust
- b. Microbial action

- c. HNO_3 manufacturing d. **All of these**
87. Which of the following statement is true?
- a. Acid rain results in acidification of water bodies
b. Acid rain reduces soil fertility c. **Both a & b** d. None of these
88. Atmospheric oxidation of SO_2 to SO_3 is influenced by
- a. Sunlight b. Humidity c. Presence of hydrocarbons d. **All of these**
89. The process of movement of nutrients from the soil by the acid rain is called
- a. Transpiration b. Evapo transpiration c. **Leaching** d. Infiltration
90. Acid rain has been increasing day by day due to
- a. Urbanization b. **Industrialization** c. Increase in vehicle population d. All
91. Acid rain effects on
- a. Materials b. Plants c. Soil d. **All**
92. The effect of acid rain
- a. **Reduces soil fertility** b. Increases atmospheric temperature
c. Causing respiratory problems d. Skin cancer
93. Which of the following is not ill effect of acid rain?
- a. Leaching of heavy metals to water bodies
b. Damage of sculptures
c. Killing of fishes
d. **Increase in the atmospheric temperature**
94. Which of the following is not ill effect of acid rain?
- a. **Leaches nutrients from the soil** b. It causes stone erosion
c. Killing of fishes d. Causes cataract
95. Which of the following statement is true?
- a. Acid rain results in acidification of water bodies
b. Acid rain reduces soil fertility
c. It causes stone cancer or stone leprosy d. **All the above**
96. Reduction in brightness of the famous Tajmahal is due to
- a. Global warming b. **Acid rain** c. Ozone depletion d. None of these
97. The term acid rain was coined in the year
- a. 1952 b. **1852** c. 1652 d. 1752

98. Carbon dioxide reacts with moisture in the atmosphere forming
- a. CaHCO_3 b. H_2CO_2 c. **H_2CO_3** d. COHb
99. Ozone layer is present in (II-2007)
- a. Troposphere b. **Stratosphere** c. Mesosphere d. Thermosphere
100. Which of the following is not present in the Stratosphere?
- a. **CO_2** b. O_2 c. O_3 d. NO_x
101. Which of the following is the unit for measuring the thickness of ozone layer?
- a. Decibels b. **Dobson unit** c. Centimeter d. None of these
102. In the stratosphere, ozone is an effective filter capable of absorbing ultraviolet radiation with wavelengths between
- a. **200 and 315 nm** b. 315 and 400 nm c. 100 and 150 nm d. 400 and 600 nm
103. Which of the following UV radiation can rapidly damage biota of all types?
- a. UV-A b. **UV-C** c. UV-B d. None of these
104. UV-C radiation lies in the region
- a. 315 to 400 nm b. **<280 nm** c. > 280 nm d. 280 to 315 nm
- 105. Which of the following statements about ozone is true? (I-2008)**
- a). Ozone is a major constituent of photochemical smog
- b). Ozone protects us from the harmful uv radiation of sun
- c). Ozone is highly reactive
- d). *All of the above*
106. Which of the following statement about Ozone is not true?
- a. Ozone is a major constituent of photochemical smog
- b. Ozone protects us from the harmful UV radiation of sun
- c. **Ozone is not a greenhouse gas**
- d. Ozone is highly reactive
107. Ozone layer thickness of stratospheric ozone layer across the globe is around
- a. 200DU b. **300DU** c. 400DU d. 500DU
108. Ozone layers absorbs
- a. **UV rays** b. Infrared rays c. Cosmic rays d. CO
109. Major compound responsible for the destruction of stratospheric ozone layer is
- a). Oxygen b). **CFC** c). Carbon dioxide d). Methane
110. Chlorofluoro Carbon's [CFC] are

- a. Nontoxic b. Nonflammable c. Non carcinogenic d. **All the above**
111. CFC's have been used as
a. Solvents b. Refrigerants c. Blowing agents for polymer foams d. **All of these**
112. The formula of CFC-114 is
a. **$\text{CF}_2\text{ClCF}_2\text{Cl}$** b. CFCl_2CF_3 c. $\text{CF}_3\text{CF}_2\text{Cl}$ d. None of these
113. The ODP of a specific chemical takes into account.
a) The reactivity of the species. b) Atmospheric lifetime of the species.
c) Molar mass of the species. d) **All of these.**
- 114. Which of the following species has the zero ODP value?**
a) CFCs b) HCFCs c) **HFCs** d) none of these.
- 115. Which of the following statement is not correct for CFCs?**
a) They are almost completely inert both chemically & biologically in the earth's atmosphere.
b) **They are very reactive in troposphere.**
c) At higher altitudes they are capable of undergoing UV photolytic decomposition.
d) None of these.
116. Each chlorine free radical can destroy the following number of ozone molecules
a. 1000 b. 10,000 c. **1,00,000** d. 100
117. Freon's are
a. HFC b. **CFC** c. NFC d. Hydrocarbons
- 118. The ozone layer is located up to -----km above the earth surface.**
a. 10 b) **50** c) 80 d) 100.
119. **The steady decline of ozone in the stratosphere is called.**
a. Ozone destruction b) **ozone hole or ozone thinning**
c) ozone formation d) none of these
- 120. Ozone in troposphere is**
a. Harmful b) **Harmless** c) Neutral d) None of these
121. **Formation of ozone layer is explained by**
a. Rosenmund reaction b). Henderson's reaction
c). **Chapman's reaction** d). Perkin's reaction

122. Ozone hole was first discovered over
a. Arctic b) **Antarctica** c) tropical region d) Africa
123. The equivalent of one Dobson unit is (II-2008)
a. 0.1mm b) **0.01 mm** c) 0.1m d) 0.01m
124. Ozone depletion causes
a. **Snow blindness** b. Photochemical smog c. Acid rain d. Vomiting
125. World Ozone day is being celebrated on (I-2008)
a. September 5th b) October 15th c) **September 16th** d) September 11th
126. Bhopal gas tragedy caused due to leakage of
a. **Methyl Iso Cyanate** b. Sulphur dioxide c. Mustard gas d. Methane
127. Which of the following statement is true about animal husbandry?
a. Animal husbandry is a part of agricultural activity
b. Animal husbandry is breeding , feeding and management of animals
c. Animal husbandry is nothing but livestock production
d. **Animal husbandry is protection of wild life**
128. Which of the following is the purpose of animal husbandry?
a. Conservation of biodiversity b. **Production of meet** c. Conservation of wildlife d. None of these
129. Domesticated animals are used for
a. Production of dairy products b. Production of fiber c. Draught d. **All of these**
130. Animal husbandry may result in
a. **Global warming** b. Acid rain c. Ozone depletion d. None of these
131. Over fishing is
a. **Undesirable** b. Desirable c. Necessary d. None of these
132. Increased demand for the food from animal origin is due to
a. Environmental vegetarianism b. Animal welfare activities. C. **Change in the diet of people** d. None of these
133. Which of the following statement is not true?
a. Animal production is strongly influenced by socio-cultural factors
b. Animal production has enormous impact on local environment
c. **Animal production doesn't cause noise pollution**
d. Animal production depends on agro-ecological conditions

CFC'S brand name:-

- **CFCl_3 Trichlorofluoromethane-CFC-11**
- **CF_2Cl_2 Dichloro-dofluoromethane-CFC-12**
- **$\text{C}_2\text{F}_3\text{Cl}_3$ Trichloro-trifluoroethane-CFC-113**
- **$\text{C}_2\text{F}_4\text{Cl}_2$ Dichloro-tetrafluoro ethane CFC-114**
- **$\text{C}_2\text{F}_5\text{Cl}$ Chloropentafluoro ethane- CFC-115**