

# INDIAN SCHOOL MUSCAT

## CHEMISTRY IIT -JEE

### Environmental chemistry

- Which of the following cause water pollution ?
  - Smoke/fly ash
  - Automobile exhausts
  - Aeroplanes
  - Silt and pesticides
- Disease caused by eating fish found in water contaminated with industrial waste having mercury is
  - Minamata disease
  - Brights disease
  - Hashimotos disease
  - Osteosclerosis.
- Photochemical smog is related to pollution if
  - Air
  - Water
  - Soil
  - All of the above
- Drained sewage has B.O.D.
  - More than that of water
  - Less than that of water
  - Equal to that of water
  - None of the above
- Photochemical smog is generally formed
  - in early hours of winters
  - around mid day in summer months
  - When intensity of solar radiations is very low
  - When concentration of particulate matter is very low
- Ozone layer of stratosphere requires protection from indiscriminate use of
  - Fungicides, insecticides, bactericides and medicines
  - Aerosols and high flying jets
  - Atomic explosions and industrial wastes
  - Weather balloons
- Chief source of water and soil pollution is
  - Mining of ores
  - Thermal power plant
  - Agro-industry
  - All of the above.
- Which of the following is major sink for carbon monoxide ?
  - Water

- b) Soil
  - c) animal respiration
  - d) Salts dissolved in ocean water.
9. Photochemical smog consists of excessive amount of X in addition to aldehydes, ketones, PAN etc. X is
- a) Methane
  - b) Carbon monoxide
  - c) Carbondioxide
  - d) Ozone.
10. Which of the following is a biodegradable pollutant
- a) Nuclear waste
  - b) DDT
  - c) Vegetable matter
  - d) plastic
11. Most hazardous metal pollutant of automobile exhaust is
- a) Mercury
  - b) Tin
  - c) Cadmium
  - d) Lead.
12. Fish die in water bodies polluted by sewage due to
- a) Pathogens
  - b) Clogging of gills by silt
  - c) Reduction in dissolved oxygen
  - d) Foul smell.
13. The agricultural field that produces maximum methane gas into atmosphere is
- a) Wheat field
  - b) Paddy field
  - c) Cotton field
  - d) Groundnut field
14. The presence of which of the following in drinking water is responsible for mottling of teeth
- a) Mercury
  - b) Iodine
  - c) Chlorine
  - d) Fluorine.
15. Which of the following statements is not true about classical smog?
- a) Its main components are produced by the action of sunlight on
  - b) emissions of automobiles and factories.
  - c) Produced in cold and humid climate.
  - d) It contains compounds of reducing natu
  - e) It contains smoke, fog and sulphur dioxide
16. Biochemical Oxygen Demand, (BOD) is a measure of organic material present in water. BOD value less than 5 ppm indicates a water sample to be \_\_\_\_\_.
- a) rich in dissolved oxygen
  - b) poor in dissolved oxygen.
  - c) highly polluted.

- d) not suitable for aquatic life
17. Dinitrogen and dioxygen are main constituents of air but these do not react with each other to form oxides of nitrogen because \_\_\_\_\_.
- the reaction is endothermic and requires very high temperature.
  - the reaction can be initiated only in presence of a catalyst.
  - oxides of nitrogen are unstable.
  - $N_2$  and  $O_2$  are unreactive.
18. The pollutants which come directly in the air from sources are called primary pollutants. Primary pollutants are sometimes converted into secondary pollutants. Which of the following belongs to secondary air pollutants?
- CO
  - Hydrocarbon
  - Peroxyacetyl nitrate
  - NO
19. Which of the following statements is correct?
- Ozone hole is a hole formed in stratosphere from which ozone oozes out.
  - Ozone hole is a hole formed in the troposphere from which ozone oozes out.
  - Ozone hole is thinning of ozone layer of stratosphere at some places.
  - Ozone hole means vanishing of ozone layer around the earth completely
20. Which of the following practices will not come under green chemistry?
- If possible, making use of soap made of vegetable oils instead of using synthetic detergents.
  - Using  $H_2O_2$  for bleaching purpose instead of using chlorine based bleaching agents.
  - Using bicycle for travelling small distances instead of using petrol/diesel based vehicles.
  - Using plastic cans for neatly storing substances
21. Phosphate containing fertilisers cause water pollution. Addition of such compounds in water bodies causes \_\_\_\_\_.
- enhanced growth of algae.
  - decrease in amount of dissolved oxygen in water.
  - deposition of calcium phosphate
  - increase in fish population
22. Which of the following show polluted environment.
- Eutrophication
  - BOD is 4ppm
  - pH of rain is 5.5
  - Amount of  $CO_2$  is 0.03%
23. Blue baby syndrome is caused by excess of
- $F^-$
  - $NO_3^-$
  - Pb
  - $SO_4^{2-}$
24. Green house effect was first described by

- a) Yues Chauvin
  - b) Einstein
  - c) Newton
  - d) Fourier
25. In Antarctica, ozone depletion is due to the formation of
- a) Acrolein
  - b) Peroxy acetyl nitrate
  - c)  $\text{SO}_2$  &  $\text{SO}_3$
  - d) Chlorine nitrate
26. Which of the following techniques is/are used to control water pollution
- a) Adsorption process
  - b) Reverse osmosis
  - c) ion exchange method
  - d) all of the above
27. The prescribed upper limit concentration of lead in drinking water is
- a) 30ppb
  - b) 70ppb
  - c) 50ppb
  - d) 60ppb
28. The brown hazy fumes of photochemical smog are due to
- a) Nitrogen dioxide
  - b) PAN formation
  - c) Aldehydes
  - d)  $\text{SO}_2$
29. Which of the following substances are regulated by The Kyoto protocol
- i. Argon ii.  $\text{CO}_2$  iii. Nitrogen iv. nitrous oxide v.  $\text{SF}_6$
- a) i, ii & iii only
  - b) i & ii only
  - c) ii & v only
  - d) ii, iv & v only
30. Which one of the following is responsible for depletion of ozone layer in the upper strata of the atmosphere?
- a) Polyhalogens
  - b) Ferrocene
  - c) Fullerenes
  - d) Freons
31. The region which is greatly affected by air pollution is
- a) Thermosphere
  - b) Stratosphere
  - c) Troposphere
  - d) Mesosphere
32. Formation of London smog takes place in
- a) Winter during day time

- b) Summer during day time
  - c) Summer during morning time
  - d) Winter during morning time
33. BOD of pond is connected with
- a) Microbes & organic wastes
  - b) Organic matter
  - c) Microbes
  - d) None of these
34. The high amount of E. coli in water is an indicator of
- a) Hardness of water
  - b) Industrial pollution
  - c) Sewage pollution
  - d) Presence of chlorine in water
35. Frequent occurrence of water blooms in a lake due to
- a) Nutrient deficiency
  - b) Oxygen deficiency
  - c) Excessive nutrient availability
  - d) Absence of herbivores in lake
36. Green chemistry means
- a) Produce colour during reactions
  - b) Reduce the use & production of hazardous chemicals
  - c) Related to the depletion of ozone layer
  - d) Study the reactions in plants
37. The gas leaked from a storage tank of the union carbide plant in Bhopal gas tragedy was
- a) Methyl isocyanate
  - b) Methyl amine
  - c) Ammonia
  - d) Phosgene
38. Identify the wrong statement in the following
- a) CFCs are responsible for ozone layer depletion
  - b) Green house effect is responsible for global warming
  - c) Ozone layer does not permit IR radiations from the sun to reach earth
  - d) Acid rain is mostly because of oxides of nitrogen and sulphur
39. Black foot disease is caused due to ground water contaminated with excess of
- a) Nitrate
  - b) Fluoride
  - c) Arsenic
  - d) Sulphur
40. The term "Biomagnification" means
- a) Growth of organism due to food consumption
  - b) Increase in population size
  - c) Blowing up of environmental issues by man
  - d) Increase in the concentration of non degradable pollutants as they pass through food chain
41. In a coal fired power plant, electrostatic precipitators are installed to control emission of

- a) SO<sub>2</sub>
  - b) NO<sub>2</sub>
  - c) SPM
  - d) CO
42. Which of the following does not occur when sewage is discharged in to water
- a) Increase in O<sub>2</sub>
  - b) Depletion of O<sub>2</sub>
  - c) Eutrophication
  - d) Cyanophycean blooms occur
43. Thermal pollution mainly affects
- a) Vegetation
  - b) Aquatic creatures
  - c) Rocks
  - d) air
44. Sewage water is purified by
- a) Aquatic plants
  - b) Micro organisms
  - c) Light
  - d) fish
45. Brewery and sugar factory waste alters the quality of water body by increasing
- a) Temperature
  - b) Turbidity
  - c) pH
  - d) COD&BOD
46. The main element of smog is
- a) O<sub>3</sub> and PAN
  - b) O<sub>3</sub>
  - c) PAN
  - d) PPN & PBN
47. Which type of clouds play significant role in creating ozone over Antartica
- a) Radioactive clouds
  - b) Polar stratospheric clouds
  - c) Spring clouds
  - d) Smoke clouds
48. The acid rain doesnot contain
- a) Sulphuric acid
  - b) nitric acid
  - c) Sulphurous acid
  - d) Acetic acid
49. High concentration of Flouride is poisonous and harmful to bones and teeth at levels over
- a) 1ppm

- b) 3ppm
- c) 5ppm
- d) 10ppm

50. Which of the following compound belongs to the category of Freons

- a)  $\text{CCl}_4$
- b)  $\text{COCl}_2$
- c)  $\text{CF}_2\text{Cl}_2$
- d)  $\text{CaClF}$

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