Chapter 38

Environmental Issues

FACT/DEFINITION TYPE QUESTIONS

1. Pollution causes undesirable changes in which the following characteristics of air, water, land or soil ?
(a) Physical (b) Chemical
(c) Biological (d) All of these

2. To improve the quality of environment (air, water and soil) the Govt. of India passed the 'Environment (Protection) Act' in year
(a) 1981 (b) 1986
(c) 1987 (d) 1974

3. Which one of the following is a most efficient device to eliminate particulate matters from the industrial emissions ?
(a) Cyclonic separators
(b) Trajectory separators
(c) Incineration
(d) Electrostatic precipitator

4. The scrubber is used mainly to remove which of the following gas/es from the exhaust after spraying water/ lime ?
(a) CO_2 (b) SO_2
(c) O_2 and N_2 (d) CO and CO_2

5. The diameter of particulate matter that causes greatest harm to human health is
(a) $\leq 2.5\ \mu m$ (b) $\leq 0.25\ \mu m$
(c) $\leq 1.0\ \mu m$ (d) $\leq 0.1 \mu m$

6. Which of the two expensive metals are used as catalysts by catalytic converters and are fitted into automobiles for reducing emission of poisonous gases ?
(a) Platinum - palladium, rhodium
(b) Cadmium, rhodium
(c) Copper, cadmium
(d) Lead, mercury

7. Which of the following level of sound may damage ear drum and can impair the hearing ability permanently ?
(a) 80 dB (b) 100 dB
(c) 120 dB (d) 150 dB

8. Euro II norms stipulate that sulphur be controlled at _____ ppm in diesel and _____ ppm in petrol.
(a) 350; 150 (b) 150; 350
(c) 350; 250 (d) 150; 250

9. All automobiles and fuel -petrol and diesel were to have met the Euro III emission specifications in some cities from 1 April 2005 and have to meet the Euro-IV norms by
(a) 1 April 2008 (b) 1 April 2009
(c) 1 April 2010 (d) 1 April 2012

10. Which of the following minimum percentage of impurities by domestic sewage make the water unfit for human use ?
(a) 1 (b) 5
(c) 0.1 (d) 0.5

11. The amount of organic matter in sewage water can be estimated by
(a) measuring oxygen demand
(b) weight of micro-organisms
(c) salt analysis
(d) calorimetery

12. Full form of B.O.D. is
(a) Biological organism death
(b) Biotic oxygen demand
(c) Biochemical oxygen demand
(d) Biological organisation day

13. In B.O.D. test oxygen plays an important role to
(a) destroy inorganic matter
(b) destroy pollution
(c) destroy waste organic matter
(d) none of these

14. Presence of large amount of nutrients in water also cause excess growth of planktonic (free-floating) algae, called _____.
(a) biomagnification
(b) eutrophication
(c) algal bloom
(d) biofortification

15. Which of the following species of plant is considered as the world's most problematic aquatic weed ?
(a) *Lantana*
(b) *Eichhornia*
(c) *Parthenium* (carrot grass)
(d) Brown algae

16. The waste water from Industries may contain toxic heavy metals having density of more than
(a) 5 g / cm^3 (b) 10 g /cm^3
(c) 2 g /cm^3 (d) 15 g /cm^3

17. Concentration of DDT for first tropic level (phytoplanktons) and top trophic level (fish eating birds) is _____ respectively in aquatic food chains if DDT is 0.003 pb in water.
(a) 0.025 ppm, 25 ppm (b) 0.003 ppm, 2 ppm
(c) 0.5 ppm, 2 ppm (d) 0.04 ppm, 2 ppm

18. DDT causes egg shell thinning in birds because it inhibits
(a) calmodulin (b) calcium ATPase
(c) magnesium ATPase (d) carbonic anhydrase

19. Natural ageing of lake by biological enrichment of its water is called
(a) biomagnification (b) eutrophication
(c) biodegradation (d) water logging

20. FOAM (Friends of the Arcata Marsh) is a group of citizens responsible for the integrated process of
(a) reducing eutrophication
(b) sewage and water treatment
(c) radio- active waste treatment
(d) minimizing global warming

21. The 'Polyblend' is a/ an
(a) recycled modified plastic waste used for laying the roads.
(b) electronic waste buried in the landfills.
(c) plastic film- waste to make disinfectants.
(d) fine powder of plastic waste used to make the plastic bags.

22. Green house gases include
(a) CO_2, CFC, CH_4 and $(NO)_x$
(b) CO_2, O_2, N_2, NO_2 and NH_3
(c) CH_4, N_2, CO_2 and NH_3
(d) CFC, CO_2, NH_3 and N_2

23. Without Green house effect the average temperature of earth surface would have been
(a) 18 °C (b) 8°C
(c) – 8°C (d) –18°C

24. Slash and burn agriculture, which is commonly known as Jhum cultivation in the north-eastern states of India, leads to
(a) deforestation (b) reforestation
(c) desertification (d) water-logging

25. _____ is a cyclical zero-waste procedure, where waste products from one process are cycled in as nutrients for other processes.
(a) Eutrophication
(b) Green house effect
(c) Integrated organic farming
(d) Biomagnification

STATEMENT TYPE QUESTIONS

26. Read the following statements.
A lake near a village suffered heavy mortality of fishes within a few days. Consider the following reasons for this;
(i) Lots of urea and phosphate fertilizer were used in the crops in the vicinity.
(ii) The area was sprayed with DDT by an aircraft.
(iii) The lake water turned green and stinky.
(iv) Phytoplankton populations in the lake declined intially thereby greatly reducing photosynthesis.
Which two of the above were the main causes of fish mortality in the lake ?
(a) (i) and (iii) (b) (i) and (ii)
(c) (ii) and (iii) (d) (iii) and (iv)

27. Pollution in big cities can be controlled to a large extent by
(i) improving traffic condition and road.
(ii) road side plantation
(iii) proper disposal of garbage and domestic as well as municipal wastes.
(iv) cannot be controlled
(a) (i) and (ii) (b) (ii) and (iii)
(c) (i) and (iv) (d) all of these

28. Which of the following statements about eutrophication are ?
(i) It can be a naturally occurring process.
(ii) It is commonly found in standing rather than running water.
(iii) It can lead to oxygen depletion.
(iv) It is commonly associated with high levels of phosphates and nitrates.
(a) (iii) and (iv) (b) (i), (ii) and (iii)
(c) (ii), (iii) and (iv) (d) all of these

29. Mark the statement that describes the eco-friendly disposal of municipal solid- waste.
(a) It should be burnt to completion.
(b) It should be dumped in open waste land.
(c) It should be dumped in sanitary landfills.
(d) It should be sorted out into bio-degradable, non- bio-degradable and recyclable wastes and treated separately.

30. Which of the following is the correct statement ?
(a) Cultural eutrophication is an accelerated form of eutrophication.
(b) In the presence of prime contaminants, such as nitrates and phosphates, the growth of algae is arrested.
(c) The water from electricity generating units enhances the growth of indigenous fauna and flora.
(d) All of the above

31. 'EcoSan' toilets, being used in Kerala and Sri Lanka are hygienic and cost effective solution to human waste disposal. Mark the correct statement regarding EcoSan.
(a) Recycled human waste from this can be used as a natural fertilizer.
(b) They are called composting toilets.
(c) They do not depend on water for the disposal of excreta.
(d) All of the above

32. Mark the correct statement.
(a) The ozone of stratosphere is good ozone.
(b) Troposphere, on top of stratosphere, is away from earth surface.
(c) The thickness of ozone is measured in dB.
(d) The wavelength of UV- B is more than that of UV- A.

33. Which of the following statement (s) is/are correct about noise pollution?
(a) It is an undesired high level of sound.
(b) It is measured in dB.
(c) It can cause damage to heart, increase blood cholesterol and even raise blood pressure etc.
(d) All of the above

34. After the conventional sedimentation, filtering and chlorine, lots of dangerous pollutants still remain. To combat this, the biologists developed a series of six connected marshes where appropriate plants, algae, fungi and bacteria were seeded into this area, which
(i) Neutralize the pollutants
(ii) Absorb the pollutants
(iii) Assimilate the pollutants
(a) All of these (b) None of these
(c) only (i) and (iii) (d) only (i) and (ii)

35. Mark the correct statement.
(a) The major contribution in green house gases is of CH_4.
(b) Global warming is because of ozone depletion.
(c) When organic waste enters into a water body its BOD increases.
(d) All of the above

36. Which of the following is/are correct regarding Montreal Protocol?
(i) Persistent organic pollutants.
(ii) Global warming and climate change.
(iii) To control the emission of ozone depleting substances.
(iv) Biosafety of genetically modified organisms.
(a) (i) and (iii) (b) (iii) only
(c) (iii) and (iv) (d) (i) and (iii)

37. Which of the following statement is incorrect?
(a) Noise pollution does not leave any residue in the environment.
(b) Noise pollution creates nervous disorders.
(c) Plants are efficient absorbers of noise of low frequency.
(d) Loss of hearing is a common disorder .

38. Which of the following would be most likely to help to slow down the greenhouse effect?
(a) Ensuring that all excess paper packaging is burned to ashes.
(b) Promoting the use of private rather than public transport.
(c) Converting tropical forests into grazing land for cattle.
(d) Re-designing land-fill dumps to allow methane to be collected.

ASSERTION/REASON TYPE QUESTIONS

In the following questions, a statement of Assertion is followed by a statement of Reason.
(a) If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
(b) If both Assertion and Reason are true but the Reason is not the correct explanation of the Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

39. **Assertion :** Methane, component of green house gases, contributing to global warming is about 20 percent.
Reason : Introduction of multi-point fuel injection engines in automobiles has decreased methane content in the exhausts.

40. **Assertion :** A suspended particulate matter (SPM) is an important pollutant released by diesel vehicles.
Reason : Catalytic converters greatly reduce pollution caused by automobiles.

41. **Assertion :** Presently, the global atmosphere is warming up.
Reason : The depletion of stratospheric ozone layer has resulted in increase in ultraviolet radiations reaching the earth.

42. **Assertion :** Water pollutants are measured by BOD.
Reason : If BOD is more, the water is polluted.

43. **Assertion :** Eutrophication shows increase in productivity in water.
Reason : With increasing eutrophication, the diversity of the phytoplankton increases.

MATCHING TYPE QUESTIONS

44. Match column-I with column-II and choose the correct option.

	Column-I		Column-II
A.	DDT	I.	CH_4, CO_2
B.	Platinum-palladium and Rhodium	II.	SO_2
C.	Acid rain	III.	Biological magnification
D.	Global warming	IV.	Catalytic converter

(a) A – IV; B – III; C – II; D – I
(b) A – I; B – III; C – II; D – IV
(c) A – II; B – III; C – IV; D – I
(d) A – III; B – IV; C – II; D – I

45. Match column-I with column-II and select the correct option.

	Column-I		Column-II
A.	Catalytic converter	I.	Particulate matter
B.	Electrostatic precipitator	II.	Carbon monoxide and nitrogen oxides
C.	Earmuffs	III.	High noise level
D.	Land fills	IV.	Solid wastes

(a) A – I, B – II, C – III, D – IV
(b) A – II, B – I, C – III, D – IV
(c) A – IV, B – III, C – II, D – I
(d) A – III, B – II, C – IV, D – I

46. Match column-I with column-II and select the correct option.

	Column-I		Column-II
A.	Environment (Protection) Act	I.	1987
B.	Air (Prevention and Control of Pollution) Act	II.	1986
C.	Water (Prevention and Control of Pollution) Act	III.	1980
D.	Concept of Joint Forest Management of Govt. of India	IV.	1974

(a) A – IV; B – III; C – II; D – I
(b) A – II; B – I; C – IV; D – III
(c) A – I; B – II; C – III; D – IV
(d) A – I; B – III; C – II; D – IV

47. Match column-I with column-II and select the correct option.

	Column-I (Organisms)		Column-II (Concentration of DDT)
A.	Zooplankton	I.	2 ppm
B.	Small fish	II.	0.04 ppm
C.	Large fish	III.	0.5 ppm
D.	Fish-eating birds	IV.	25 ppm

(a) A – II; B – III; C – I; D – IV
(b) A – III; B – II; C – I; D – IV
(c) A – II; B – III; C – IV; D – I
(d) A – II; B – I; C – III; D – IV

48. Match column-I with column-II and select the correct option.

	Column-I		Column-II
A.	Ahmed Khan	I.	Spreading information and help on the practice of integrated organic farming
B.	Ramesh Chandra Dagar	II.	Protecting wildlife
C.	Amrita Devi Bishnoi	III.	A plastic sack manufacturer of Bangalore developed polyblend

(a) A – III; B – I; C – I (b) A – II; B – I; C – I
(c) A – I; B – II; C – II (d) A – III; B – II; C – II

49. Which one of the following pairs is mismatched?
(a) Fossil fuel burning - release of CO_2
(b) Nuclear power - radioactive wastes
(c) Solar energy - green house effect
(d) Biomass burning - release of CO_2

50. Match the items of column-I with column-II and choose the correct option.

	Column-I		Column-II
A.	UV	I.	Biomagnification
B.	Biodegradable organic matter	II.	Eutrophication
C.	DDT	III.	Snow blindness
D.	Phosphates	IV.	BOD

(a) A – II, B – I, C – IV, D – III
(b) A – III, B – II, C – IV, D – I
(c) A – III, B – IV, C – I, D – II
(d) A – III, B – I, C – IV, D – II

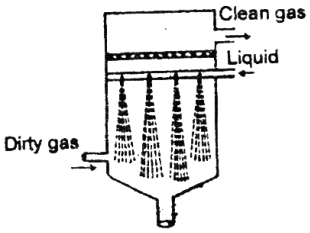
51. Match column-I with column-II and choose the correct option.

	Column-I		Column-II
A.	Colloidal materials	I.	Typhoid, Jaundice, Cholera
B.	Water-borne diseases	II.	Irreparable computes and other electronic goods
C.	E-wastes	III.	Faecal matter bacteria, cloth and paper fibres
D.	Manure	IV.	Troposphere
E.	Bad 'Ozone'	V.	Cattle excreta (dung)

(a) A – I, B – III, C – II, D – V, E – IV
(b) A – III, B – I, C – V, D – II, E – IV
(c) A – III, B – I, C – II, D – V, E – IV
(d) A – III, B – I, C – V, D – IV, E – II

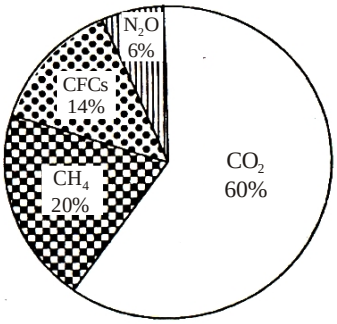
DIAGRAM TYPE QUESTIONS

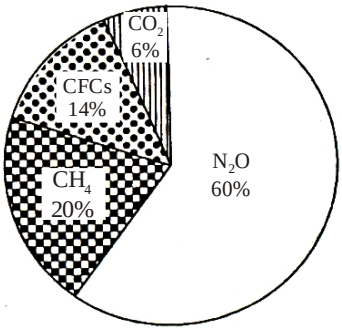
52. According to size of air pollutants, range and types of chemical the device given below is best used to control which of the following pollutants?

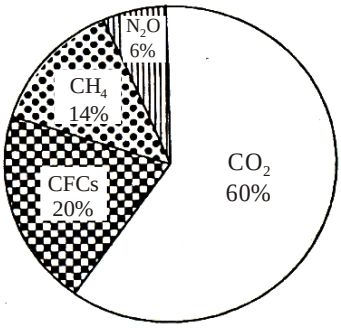


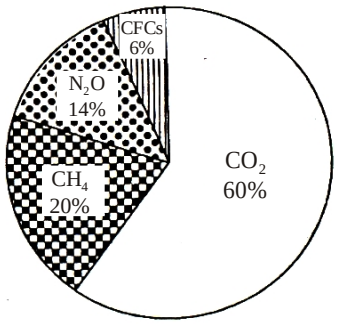
(a) Large particulates
(b) Charged particulate matter
(c) Dissolved gases
(d) Fine particles

53. Which of the following figures shows correct relative contribution of greenhouse gases to global warming?

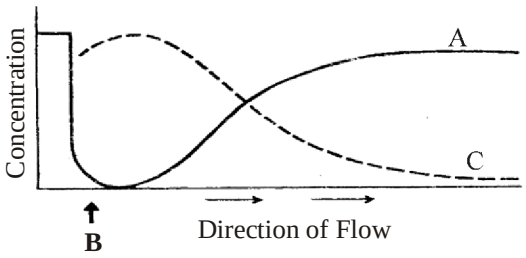
(a)


(b)


(c)


(d)


54. The given graph shows the effect of sewage discharge on some important characteristics of a river. Which of the following is the correct label for A, B and C ?



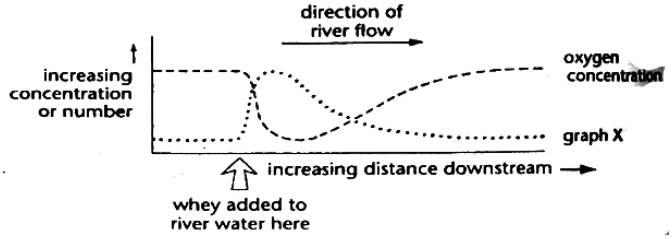
(a) (A) Dissolved oxygen, (B) Point of sewage discharge, (C) BOD

(b) (A) BOD, (B) Point of treated water discharge, (C) Dissolved oxygen

(c) (A) Dissolved oxygen, (B) Point of treated water discharge, (C) BOD

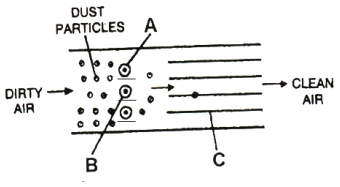
(d) (A) BOD, (B) Point of sewage discharge, (C) Dissolved oxygen

55. The diagram below shows the effect of polluting a river with untreated whey. What does graph X represent?



(a) Bacterial count.
(b) Number of fish.
(c) Mass of curds.
(d) Concentration of rennet.

56. The given diagram shows electrostatic precipitator. Identify A, B and C.



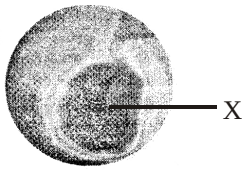
(a) A - Discharge corona, B - Negatively charged wire, C - Collection plate grounded

(b) A - Discharge corona, B - Positively charged wire, C - Collection plate grounded

(c) A - Discharge corona, B - Negatively charged wire, C - Collection plate burnt

(d) A - Uncharge corona, B - Positively charged wire, C - Collection plate never grounded

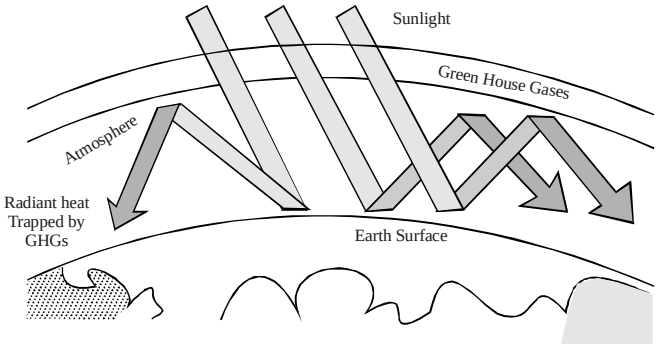
57. What does 'x' indicate in the given figure?



(a) Greenhouse effect (b) El Nino Effect

(c) Ozone hole (d) Marsh meadow stage

58. Which of the following phenomenon is represented by the given figure?



(a) Green house effect (b) El Nino effect

(c) Ozone hole (d) Eutrophication

CRITICAL THINKING TYPE QUESTIONS

59. CNG is better than petrol/ diesel, since

(a) CNG burns more efficiently.

(b) CNG burns completely.

(c) CNG cannot be adulterated.

(d) All of the above

60. In clean water, the concentration of

(a) BOD is low but DO is high.

(b) Both BOD and DO are high.

(c) BOD is high but DO is low.

(d) Both BOD and DO are low.

61. Water pollution can be stopped best by

(a) treating effluents to remove injurious chemicals.

(b) rearing more fishes.

(c) cultivating useful water plants.

(d) spraying with DDT.

62. Fishes die by sewage because

(a) of its bad smell.

(b) it replaces food material of fishes.

(c) it increases oxygen competition among fishes.

(d) CO_2 is mixed in large amounts in water.

63. A lake affected by high levels of artificial eutrophication will have

(a) high nutrient levels, large phytoplankton populations, and low oxygen levels at depth.

(b) high levels of nutrients, low phytoplankton levels, high oxygen levels in surface waters.

(c) low nutrient levels, large phytoplankton populations, and low oxygen levels at depth.

(d) low nutrient levels, low phytoplankton populations, and high oxygen levels at depth.

64. Two lakes, A and B are identical in all aspects except that lake A has higher temperature. Which of the following is true ?

(a) A has higher rate of oxygen dissolution.

(b) B has higher rate of oxygen dissolution.

(c) Oxygen dissolution of both is the same.

(d) Both the lakes have same BOD.

65. Today the concentration of green house gases is very high because of

(a) use of refrigerator.

(b) increased combustion of oils and coal.

(b) deforestation.

(d) all of the above

66. Which constituent of the atmosphere is likely to change if the forest cover is removed ?

(a) O_2 level is increased

(b) CO_2 level is increased

(c) O_2 level is significantly increased

(d) CO_2 level is significantly decreased

67. If the forest cover is reduced to half, what is most likely to happen on a long term basis?

(a) Tribals living in these areas will starve to death.

(b) Cattle in these and adjoining areas will die due to lack of fodder.

(c) Large areas will become deserts.

(d) Crop breeding programmes will suffer due to a reduced availability of variety of germplasm.

68. Which of these is not an advantage of CNG over diesel?
(a) Burns more efficiently.
(b) It is cheap.
(c) Cannot be siphoned off by thieves.
(d) Easy to lay down pipelines for delivery.

69. Motor vehicles equipped with catalytic converter are advised to use unleaded petrol because
(a) lead causes inactivation of catalyst.
(b) lead reduces the emission of poisonous gases.
(c) lead is a heavy metal.
(d) lead decreases the efficiency of vehicle.

70. Which of the following steps is not taken for reducing vehicular pollution?
(a) Use of unleaded petrol.
(b) Use of high-sulphur petrol and diesel.
(c) Use of catalytic converters in vehicles.
(d) Application of stringent pollution-level norms for vehicles.

71. Biomagnification refers to increase in concentration of the toxicant at successive trophic levels. This happens because
(a) a toxic substance accumulated by an organism can not be metabolized.
(b) a toxic substance accumulated by an organism can not be excreted.
(c) a toxic substance is passed on to the next trophic level.
(d) All of the above

72. Which of the following statements is/are correct about 'Eco San' toilets?
(a) It is a sustainable system for handling human excreta or faecal matter by using dry 'composting toilets'.
(b) These are very useful for the rural areas where sewer systems are not possible.
(c) These toilets are hygienic, efficient, practical & most effective for the disposal of human waste.
(d) All of the above

73. Which one of the following statement pertaining to pollutants is correct?
(a) DDT is a non-biodegradable pollutant.
(b) Excess fluoride in drinking water causes osteoporosis, hardening of bones, stiff joints.
(c) Excess cadmium in drinking water causes black foot disease.
(d) Methylmercury in water may cause "Itai Itai" disease.

74. The effect of todays radioactive fall out will be harmful to children of future generation because
(a) infants are more susceptible to radiations.
(b) susceptibility to radiation increase with age.
(c) mutated genes are frequently recessive.
(d) contamination of milk supply is not cumulative.

75. Which of the following is not an environmental problem?
(a) Soil erosion (b) Water logging
(c) Desertification (d) Reforestation

76. Which of the following is not one of the prime health risks associated with greater UV radiation due to depletion of stratospheric ozone?
(a) Increased liver cancer
(b) Increased skin cancer
(c) Damage to eyes
(d) Reduced immune system

77. As a result of global warming, the sea level will
(a) increase (b) decrease
(c) remain the same (d) none of these

78. The most adverse effect of radioactive pollutant is
(a) gene mutation (b) hepatitis
(c) polio (d) T.B.

79. Drawback of DDT as pesticide is that
(a) it becomes ineffective after sometime.
(b) it is less effective than others.
(c) it is not easily/rapidly degraded in nature.
(d) its high cost.

80. Global warming can be controlled by
(a) reducing reforestation, increasing the use of fossil fuel.
(b) increasing deforestation, slowing down the growth of human population.
(c) increasing deforestation, reducing efficiency of energy usage.
(d) reducing deforestation, cutting down use of fossil fuel

81. Climate of the world is threatened by
(a) increasing concentration of atmospheric oxygen.
(b) decreasing amount of atmospheric oxygen.
(c) increasing amount of atmospheric carbondioxide.
(d) decreasing amount of atmospheric carbondioxide.

82. Which one of the following is not correct as regards to the harmful effects of particulate matter of the size 2.5 micro meters or less?
(a) It can be inhaled into the lungs.
(b) It can cause respiratory problems.
(c) It can directly enter into our circulatory system.
(d) It can cause inflammation and damage to the lungs.

83. Algal blooms impart a distinct colour to water due to
(a) their pigments.
(b) excretion of coloured substances.
(c) formation of coloured chemicals in water facilitated by physiological degradation of algae.
(d) absorption of light by algal cell wall.

84. In the coming years, skin related disorders will be more common due to
(a) air pollution
(b) use of detergents
(c) water pollution
(d) depletion of ozone layer

85. Vast tracts of rainforest have been clear-cut and burned. This practice has increased atmospheric carbon dioxide levels significantly because

(a) forest provided a place for the carbon dioxide to be used.

(b) burning of the forest released a large amount of carbon dioxide into the atmosphere.

(c) grasslands that replaced the forests can't utilize as much carbon dioxide.

(d) all of the above

86. In an aquatic ecosystem, maximum biomagnification is seen among

(a) fishes (b) phytoplanktons

(c) microscopic plant (d) zooplanktons

87. Soil fertility can be destroyed by

(a) cutting down forests

(b) acid rain

(c) overgrazing and over-irrigation

(d) all of the above

88. The presence of ozone in the atmosphere of earth

(a) is advantageous since it supplies O_2 for people travelling in jets.

(b) helps in checking the penetration of ultraviolet rays to earth.

(c) hinder higher rate of photosynthesis.

(d) has been responsible for increasing the average global temperature in recent years.

89. Nuclear power stations even with adequate radiation safety measures generate

(a) thermal pollution of water bodies.

(b) thermal pollution of soil.

(c) noise polllution.

(d) all of the above