

## CHAPTER 16

## ENVIRONMENTAL ISSUES

## SECTION A: TOPICWISE QUESTIONS

**TOPIC 1: Air Pollution and its control****Controlling Vehicular Air Pollution: A Case Study of Delhi**

1. Any undesirable change in physical, chemical or biological characteristic of air, land, water or soil is called

- (A) Biomagnification (B) Population explosion  
(C) **Pollution** (D) Eutrophication

2. Agents that bring about an undesirable change in our environment are called as

- (A) Allergens (B) Mutagens  
(C) Carcinogens (D) **Pollutants**

3. Humans are dependent on the air for

- (A) Nutrition (B) **Respiration**  
(C) Circulation (D) All of the above

4. Air pollutants causes injury to

- (A) Humans only (B) Plants/crops only  
(C) Animals only (D) **All living organisms**

5. Air pollutants affects the crops/plants as they

- (A) Reduce the growth of crops (B) Reduce the yield of crops  
(C) Cause premature death of plants (D) **All of the above**

6. In human and animals, air pollutants deleteriously affect the

- (A) **Respiratory system** (B) Digestive system  
(C) Both A and B (D) None of the above

7. Harmful effects of air pollutant is dependent on

- (A) Concentration of pollutants (B) Duration of exposure

(C) Organism

(D) All of the above

8. Smokestacks of thermal power plants, smelters and other industries release

(A) Gaseous air pollutants

(B) Particulate pollutants

(C) Harmless gases

(D) All of the above

9. Select out the pair of the harmless gases

(A) CO and CO<sub>2</sub>

(B) SO<sub>2</sub> and CH<sub>4</sub>

(C) N<sub>2</sub> and O<sub>2</sub>

(D) NO<sub>2</sub> and NO

10. Electrostatic precipitator can remove over

(A) 99 per cent SO<sub>2</sub> from exhaust

(B) 99.9 per cent SO<sub>2</sub> from exhaust

(C) 99 per cent particulate matter present in the exhaust

(D) 99.9 per cent particulate matter present in the exhaust

11. Electrostatic precipitator has electrode wires that are maintained at several thousand volts, which

(A) Produce a scrubber to remove SO<sub>2</sub> gas

(B) Attract the dust particles

(C) Produce a corona that releases electrons

(D) Produce a corona that attach to dust particles

12. In electrostatic precipitator, the released electrons attach to the

(A) Corona

(B) Negatively charged wire

(C) Collection plates that are grounded

(D) Dust particles giving them a net negative charge

13. The negatively charged dust particles are attracted by

(A) Electrode wires

(B) Discharge corona

(C) Collection plates

(D) All of the above

14. The velocity of air between the collection plates must be

(A) Low enough to cross the strong electric field

- (B) High enough to cross the strong electric field
- (C) High enough to pass quickly through the collection plates
- (D) Low enough to allow the dust to fall**

15. In a scrubber, the exhaust is passed through

- a. A spray of water
- b. A spray of sulphur dioxide
- c. A spray of lime

- (A) a and b
- (B) b and c
- (C) a and c**
- (D) a, b and c

16. Fine particulates (<PM<sub>2.5</sub>) can be inhaled deep into the lungs and can cause

- (A) Breathing and respiratory symptoms
- (B) Irritation and inflammation
- (C) Damage to lungs and premature deaths
- (D) All of the above**

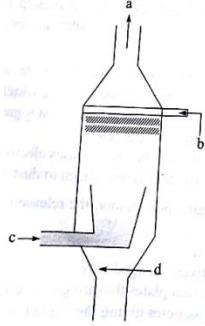
17. What measures can be taken to control the emission of air pollutants from automobiles?

- (A) Proper maintenance of automobiles
- (B) Use of lead-free petrol or diesel
- (C) Use catalytic converters
- (D) All of the above**

18. As the automobile exhaust passed through the catalytic converter

- (A) Unburnt hydrocarbons are converted into carbon dioxide and water
- (B) Carbon monoxide are changed to carbon dioxide
- (C) Nitric oxide changed to nitrogen gas
- (D) All of the above**

19. Recognise the figure and find out the correct matching.



- (A) a – dirty air, c – clean air, d – water or lime spray, b – particulate matter  
 (B) a – dirty air, c – clean air, b – water or lime spray, d – particulate matter  
 (C) c – dirty air, a – clean air, d – water or lime spray, b – particulate matter  
 (D) c – dirty air, a – clean air, b – water or lime spray, d – particulate matter

20. Undesired high level of sound is called

- (A) Music  
 (B) Noise  
 (C) Song  
 (D) Blast

21. What are the consequences of the noise pollution on humans?

- a. Psychological disorders  
 b. Physiological disorders  
 c. Sleeping sickness  
 d. Increased heart beat  
 e. Altered breathing pattern  
 f. Stress

- (A) c, d, e and f  
 (B) a, b, d, e and f  
 (C) a, b, c and f  
 (D) a, b, c, d, e and f

22. 150 dB or more sound is generated by

- (A) Normal conversation  
 (B) By takeoff of a jet plane

(C) By takeoff a rocket

(D) Both B and C

23. Which of the following exposure may leads to permanently impairing/damaging hearing abilities of humans?

(A) Chronic exposure to a relatively lower noise level of cities

(B) A brief exposure to extremely high sound level (150 dB or more)

(C) Both A and B

(D) None of the above

24. Reduction of noise in our industries can be affected by

(A) Muffling noise

(B) Use of sound-absorbent materials

(C) Both A and B

(D) None of the above

25. Stringent following of laws laid down relation to noise need to be enforced to protect ourselves from noise pollution. These laws are

a. Delimitation of horn-free zones around hospitals and schools

b. Permissible sound-levels of crackers

c. Permissible sound-levels of loudspeakers

d. Timing after which loudspeaker cannot be played

(A) a, b and d

(B) b, c and d

(C) a, b and c

(D) a, b, c and d

26. In the 1990s among the 41 most polluted cities of the world, Delhi ranked

(A) Second

(B) Third

(C) Fourth

(D) Fifth

27. CNG stands for

(A) Compressed Normal Gas

(B) Common Natural Gas

(C) Compressed Natural Gas

(D) Combined Natural Gas

28. The main problem with switching over to CNG is the difficulty of

(A) Laying down pipelines to deliver CNG through distribution point or pumps

- (B) CNG cannot be adulterated
- (C) CNG cannot be siphoned off by thieves
- (D) All of the above

29. Steps taken in Delhi for reducing vehicular pollution include

- a. Phasing out of old vehicles
- b. Use of unleaded petrol
- c. Use of low-sulphur petrol and diesel
- d. Use of catalytic converters in vehicles
- e. Application of stringent pollution-level norms for vehicles

- (A) b, d and e
- (B) a, c and d
- (C) a, b, c and d
- (D) a, b, c, d and e

30. The government of India through a new auto fuel policy has laid out a roadmap to cut down vehicular pollution in Indian cities. More stringent norms for fuels means steadily reducing the

- a. Sulphur dioxide content in diesel and petrol
- b. Sulphur content in petrol and diesel
- c. Aromatic content in petrol
- d. Aromatic content in diesel

- (A) a and b
- (B) a, c and d
- (C) b, c and d
- (D) a, b, c and d

31. What are the specifications of the Euro III norms?

- (A) Sulphur can be controlled at 150 ppm in diesel
- (B) Sulphur can be controlled at 350 ppm in petrol
- (C) Aromatic hydrocarbons are to be contained at 42 per cent of the concerned fuel
- (D) All of the above

32. According the roadmap, the goal is to

- (A) Reduce sulphur to 50 ppm in petrol

- (B) Reduce sulphur to 150 ppm in diesel
- (C) Sulphur level bring down at the level of 30 per cent
- (D) All of the above

33. Corresponding to the fuel, vehicle engines will also need to be upgraded. Bharat stage II (BS II) is applicable in India in

- (A) 13 Mega cities (Delhi and NCR, Lucknow, Sholapur)
- (B) Throughout the country
- (C) Not applicable in any city of India**
- (D) 4 metro cities (Delhi, Mumbai, Kolkata and Chennai) only

34. Match the columns I, II and III, and choose the correct combination from the options given.

	Column I		Column II		Column III
a.	BS III	1.	Since April 2010	k.	For two wheelers
b.	BS IV	2.	Since October 2010	L.	For three wheelers
				M.	For four wheelers

- (A) a – 1 – K, b – 2 – M
- (B) a – 1 – L, b – 2 – M
- (C) a – 2 – K and L, b – 1 – M
- (D) a – 2 – K, L and M, b – 1 – M**

35. Bharat stage III (BS III) is applicable to

- (A) 13 Mega cities (Delhi and NCR, Lucknow, Sholapur)
- (B) Throughout the country**
- (C) Not applicable in any city of India
- (D) 4 metro cities (Delhi, Mumbai, Kolkata and Chennai) only

36. Bharat state IV (BS IV) is applicable to

- (A) 13 Mega cities (Delhi and NCR, Lucknow, Sholapur)**
- (B) Throughout the country
- (C) Not applicable in any city of India
- (D) 4 metro cities (Delhi, Mumbai, Kolkata and Chennai) only

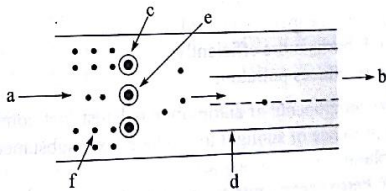
37. Mass emission standards, BS II is equivalent to

- (A) BS III (B) BS IV  
(C) Euro II (D) Euro III

38. By the efforts made by Government, the air quality of Delhi has significantly improved. A substantial fall has been found in Delhi between 1997 and 2005, for the

- (A) CO<sub>2</sub> level (B) SO<sub>2</sub> level  
(C) NO<sub>2</sub> level (D) Both A and B

39. Recognise the figure and find out the correct matching.



- (A) a – clean air, b – dirty air, c – collection plate, d – discharge corona, e – dust particles, f – negatively charged wire  
(B) b – clean air, a – dirty air, d – collection plate, c – discharge corona, e – dust particles, f – negatively charged wire  
(C) b – clean air, a – dirty air, c – collection plate, d – discharge corona, f – dust particles, e – negatively charged wire  
(D) b – clean air, a – dirty air, d – collection plate, c – discharge corona, f – dust particles, e – negatively charged wire

40. In vehicles, catalytic converter are used to

- (A) Increase mileage (B) Convert CO<sub>2</sub> to carbonates  
(C) Increase efficiency of lead petrol (D) Convert CO to CO<sub>2</sub>

41. Consider statements a – c about pollution

- a. To control air pollution all Delhi buses were asked to run on unleaded petrol by the end of 2002.  
b. Electrostatic precipitator can remove 99% of particulate matter from thermal power plant exhaust.  
c. It is possible to estimate amount of organic matter.



- (A) b and c correct (B) a and c correct  
(C) b alone correct (D) All are correct
42. Select the correct statement about particulate matter.
- (A) 10  $\mu\text{m}$  size creates severe lung damage  
(B) More than 2.5  $\mu\text{m}$  gets trapped in lungs and causes  
(C) Less than 2.5  $\mu\text{m}$  penetrates deep into lungs  
(D) None of the above
43. The expensive metals used in catalytic converters of automobiles are
- (A) Cadmium and Rhodium (B) Platinum, Palladium and Rhodium  
(C) Lead and Cadmium (D) Copper and Cadmium
44. Which one is not an advantage of CNG over diesel?
- (A) Burns more efficiently (B) It is cheap  
(C) Cannot be adulterated (D) Easy to lay down pipelines for delivery
45. One of the following is not a possible reason for use of CNG in automobiles.
- (A) It can be adulterated (B) It is cheaper than petrol  
(C) It burns more efficiently (D) It reduces pollution
46. Two components of automobile exhaust that combine in the presence of sunlight to produce toxic substances such as photochemical smog are
- (A) Peroxyacetyl nitrate and ozone (B) Acetylene and ethylene  
(C) Chlorine and hydrogen chloride (D) Methane and chlorofluorocarbons
47. World environment day is
- (A) 11<sup>th</sup> July (B) 5<sup>th</sup> June  
(C) 1<sup>st</sup> Dec. (D) 16<sup>th</sup> Sep
48. Most toxic product of vehicle pollution has been
- (A) pb (B) CO<sub>2</sub>  
(C) CO (D) NO<sub>x</sub>

49. Match the items of Column I and Column II and select the correct combinations.

	Column-I		Column-II
a.	Electrostatic Precipitator	p.	Removes gases like SO <sub>2</sub>
b.	Scrubber	q.	Reduce automobile emission
c.	Catalytic converter	r.	Removes particulate matter

(A) a – q, b – r, c – p

(B) a – r, b – q, c – p

(C) a – p, b – q, c – r

(D) a – r, b – p, c – q

50. At present the concentration of atmospheric CO<sub>2</sub> is

(A) 100 ppm

(B) 240 ppm

(C) 380 ppm

(D) 520 ppm

51. Damage to Taj Mahal is being caused by

(A) Acid rain

(B) Dust

(C) Global warming

(D) Smoke

52. SO<sub>2</sub> pollution is indicated by

(A) Deschampsia (grasses)

(B) Sphagnum (mosses)

(C) Usnea (lichens)

(D) Cucurbita (climbers)

53. Carbon monoxide is pollutant as it

(A) Inactivates nerves

(B) Inhibits glycolysis

(C) Combines with oxygen

(D) Combines with haemoglobin

54. Acid rains are produced by

(A) Excess NO<sub>2</sub> and SO<sub>2</sub> form burning fossil fuels

(B) Excess production of NH<sub>3</sub> by industry and coal gas

(C) Excess release of carbon monoxide by incomplete combustion

(D) Excess formation of CO<sub>2</sub> by combustion and animal respiration

**TOPIC 2 : Water Pollution and its Control****A case Study of Integrated Waste Water Treatment**

55. Read the following statements and find out the correct statement.

- (A) In waste water (domestic sewage), sand, silt and clay are included in suspended solids.
- (B) In domestic sewage, nutrients (like nitrates, phosphates, ammonia, sodium and calcium) are included in colloidal materials.
- (C) In domestic sewage, fecal matter, bacteria, cloth and paper fibres are included as dissolved materials.
- (D) All of the above

56. Read the following statements and find out the incorrect statement.

- (A) Solids are relatively easy to remove from domestic sewage.
- (B) Dissolved salts such as nitrates and phosphates, and toxic metal ions and organic compounds are most difficult to remove.
- (C) Presence of large amounts of nutrients in waters causes excessive growth of fishes and other aquatic creatures.
- (D) None of the above

57. Plankton are

- (A) Free – floating forms (B) Actively floating forms
- (C) Passively floating forms (D) Both A and B

58. Presence of large amount of nutrients in waters causes excessive growth of planktonic algae called

- (A) Algal boom (B) Biomagnification
- (C) Earmuffs (D) Algal bloom

59. The world's most problematic aquatic weed is

- (A) Parthenium hysterophorus (B) Lantana camara
- (C) Eichhornia crassipes (D) All of the above

60. Which of the following is called 'Terror of Benal'?

- (A) Water hyacinth (B) Bengal tigers

(C) Saurav Ganguly

(D) Indian Premier League/IPL

61. Algal bloom

(A) Causes deterioration of the water quality

(B) Causes fish mortality

(C) May toxic to human beings and animals

(D) All of the above

62. Water hyacinth grow abundantly in

(A) Eutrophic water bodies

(B) Mesotrophic water bodies

(C) Oligotrophic water bodies

(D) All of the above

63. Sewage from our homes as well as from hospitals are likely to contain many undesirable pathogenic microorganisms, and its disposal into a water body without proper treatment may cause outbreak of serious diseases, such as

a. Dysentery

b. Common cold

c. Thphoid

d. Pneumonia

e. Jaundice

f. Cholera

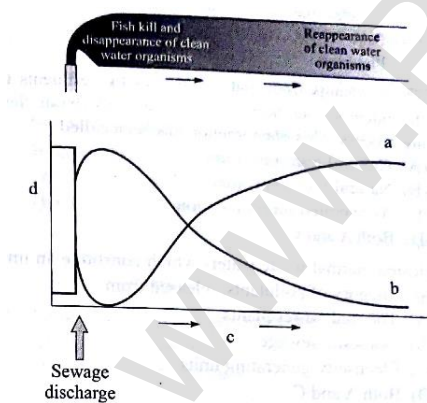
(A) a, b, c and e

(B) b, c, d and f

(C) a, c, e and f

(D) a, b, c, e and f

64. Recognise the figure and find out the correct matching.



(A) a – BOD, b – dissolved oxygen, c – concentration, d – direction of flow

(B) a – BOD, b – dissolved oxygen, d – concentration, c – direction of flow

(C) b – BOD, a – dissolved oxygen, c – concentration, d – direction of flow

(D) b – BOD, a – dissolved oxygen, d – concentration, c – direction of flow

65. Toxic substances and heavy metals are often present in the waste from industries like

- (A) Petroleum water from industries like                      (B) Metal extraction and processing  
(C) Chemical manufacturing                                      (D) All of the above

66. Heavy metals are defined as elements with density

- (A)  $>5 \text{ g/mm}^3$     (B)  $< 5\text{g/mm}^3$   
(C)  $> 5\text{g/cm}^3$     (D)  $< 5\text{g/cm}^3$

67. Identify the heavy metals from the following.

- a. Cadmium (Cd)    b. Copper (Cu)  
c. Chromium (Cr)    d. Cobalt (Co)  
e. Mercury (Hg)    f. Lead (Pb)

- (A) a, b, e and f    (B) a, b, c and d  
(C) c, d, e and f    (D) a, b, c, d, e and f

68. Biomagnification occurs due to toxic chemical accumulated by an organism

- a. Cannot be metabolised    b. Can be metabolized  
c. Cannot be excreted    d. Can be excreted

- (A) a and c    (B) b and d  
(C) a, b and c    (D) a, b, c and d

69. The natural ageing of a lake span thousands of years, depending on the

- (A) Climate    (B) Size of the lake  
(C) Some other factors    (D) All of the above

70. During eutrophication, marsh plants eventually gives way to large masses of floating plants called

- (A) Peat    (B) Bog  
(C) Plankton    (D) Bloom

71. The pollutants from man's activities like effluents from the industries and homes can radically accelerate the aging process. This phenomenon has been called

- (A) Cultural Eutrophication    (B) Natural Eutrophication

(C) Accelerated Eutrophication

(D) Both A and C

72. Heated/thermal waste waters which constitute an important category of pollutants, released from

(A) Thermal power plants

(B) Domestic sewage

(C) Electricity – generating units

(D) Both A and C

73. Wastewater including sewage can be treated in an integrated manner, by Utilising a mix of artificial and natural processes. An example of such an initiative is the

(A) State of India, i.e. Bengaluru/Banglore, by Ahmed Khan

(B) State of India, i.e. Sonipat, Haryana, by Ramesh Chandra Dagar

(C) Town of Arcata, situated along the northern coast of California, USA (America)

(D) Gharwal Himalaya, Uttarakhand

74. The town people of Arcata, created an integrated waste water treatment process, within a natural system, by collaborating with biologists from

(A) Leeds University, U.K.

(B) Humboldt State University, California

(C) Indiana University, Bloomington

(D) University of Minnesota, USA

75. In integrated waste water treatment cleaning occurs in

(A) Two stages

(B) Three stages

(C) Four stages

(D) Five stages

76. Which of the following steps are taken in the first stage of integrated waste water treatment?

(A) Sedimentation

(B) Filtering

(C) Chlorine treatment

(D) All of the above

77. To consider the heavy metals, what steps are taken in an innovative approach?

(A) The biologists developed a series of six connected marshes over 60 hectares of marshland.

(B) Appropriate plants, algae, fungi and bacteria were seeded into this area, which neutralize, or assimilate the pollutants.

(C) As water flows through the meshes, it gets purified naturally.

(D) All of the above steps are taken.

78. FOAM stands for

- (A) Farmer's of the American Marsh (B) Friend's of the American Marsh  
(C) Farmer's of the Arcata Marsh (D) Friend's of the Arcata Marsh

79. A sustainable system for handling human excreta, using dry composting toilets is called

- (A) Ecological sanitation (B) Ecosan toilets  
(C) Municipal toilets (D) Both A and B

80. What are the features of the ecological sanitation?

- (A) Ecological sanitation is a practical, hygienic, efficient and cost effective solution to human waste disposal.  
(B) In this method, human excreta can be recycled into a resource as natural fertilizer.  
(C) This method requires the need of chemicals fertilizers.  
(D) All of the above.

81. In domestic sewage, suspended solids, colloidal and dissolved materials constitute

- (A) 10% (B) 1%  
(C) 99% (D) 0.1%

82. Correct order of biomagnification of DDT in an aquatic food chain is

- (A) Water – 0.003 ppb, zooplankton – 0.5 ppm, small fish – 0.4 ppm, large fish – 2 ppm, fish eating birds – 25 ppm  
(B) Water – 0.003 ppb, zooplankton – 0.04 ppm, small fish – 0.5 ppm, large fish – 2 ppm, fish eating birds – 25 ppm  
(C) Water – 0.003 ppb, small fish – 0.04, zooplankton – 0.5 ppm, large fish – 2 ppm, fish eating birds – 25 ppm  
(D) Water – 0.003 ppm, fish eating birds – 25 ppm, zooplankton – 0.5 ppm, small fish – 0.04 ppm, large fish – 2.5 ppm

83. A large quantity of urban sewage is drained to a nearby river. Which among the given conditions would happen after mixing of sewage into the river?

- a. BOD of receiving water body increases  
b. DO of receiving water body decreases

c. It will not cause mortality among fishes and other aquatic creatures

d. It will lead to nutrient enrichment of receiving water body

(A) a, b and c

(B) a, b and d

(C) b and c

(D) c and d

84. Which of the following statements does not apply to eutrophication?

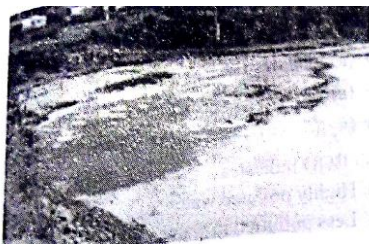
(A) It is natural aging of a lake by nutrient enrichment of its water.

(B) In a young lake the water is cold and clear and supports less life.

(C) The nutrients such as sulphur and phosphorus encourage the growth of aquatic organisms in the lake.

(D) Overgrowth of algae leads to scum that depletes the level of dissolved oxygen in water.

85. The following figure show



(A) Algal bloom

(B) Biomagnification

(C) Nitrification

(D) BOD

86. Which pollution causes jaundice?

(A) Water

(B) Air

(C) Land

(D) Thermal

87. Indiscriminate use of fertilizers causes

(A) Air pollution

(B) Water pollution

(C) Land pollution

(D) All of the above

88. Phosphate pollution is caused by

(A) Weathering of phosphate rocks only

(B) Agricultural fertilizers

(C) Phosphate rocks and sewage

(D) Sewage and agricultural fertilizers



89. Water pollution is due to

- (A) Agricultural discharge (B) Sewage and other wastes  
(C) Industrial effluents (D) All the above

90. Water blooms are formed by

- (A) Lemna (B) Hydrilla  
(C) Water Hyacinth (D) Planktonic algae

91. American water plant that has become a troublesome water weed in India is

- (A) Cyperus rotundus (B) Eichornia crassipes  
(C) Trapa latifolia (D) Trapa bispinosa

92. Eutrophication is a type of

- (A) Land pollution (B) Air pollution  
(C) Water pollution (D) Noise pollution

93. Degradable pollutant is

- (A) Domestic waste (B) DDT  
(C) Mercury salt (D) Aluminum foil

94. A lake receiving nutrients would be

- (A) Oligotrophic (B) Eutrophic  
(C) Sink (D) Rich in fossil

95. Biochemical oxygen demand in a river water

- (A) Remains unchanged when algal bloom occurs  
(B) Increases when sewage gets mixed up with river water  
(C) Has no relationship with concentration of oxygen in water  
(D) Gives a measure of Salmonella in water

96. Biological magnification occurs in case of

- (A) Organochlorine insecticides (B) Organophosphate pesticides

(C) Plants and animals in ecosystem with abundant resources

(D) Photography

97. Fertilisers added to fresh water will cause

(A) Death of plants

(B) Decrease in aquatic animals

(C) Increase in aquatic animals

(D) Eutrophication

98. Polluted waters do not contain

(A) Stone fly larvae

(B) Sewage fungus

(C) Water hyacinth

(D) Cyanobacteria

99. Mottling of teeth is due to presence of an element in drinking water

(A) Mercury

(B) Fluorine

(C) Boron

(D) Chlorine

100. DDT is

(A) Organophosphate

(B) Organochlorine

(C) Carbamate

(D) Triazine

101. Fluoride pollution mainly affects

(A) Brain

(B) Heart

(C) Teeth

(D) Kidney

102. Which one of the following is not used for disinfection of drinking water?

(A) Chlorine

(B) Ozone

(C) Chloramine

(D) Phynyl

103. Which one of the following statements pertaining to pollutant is correct?

(A) DDT is non biodegradable pollutant.

(B) Excess fluoride in drinking water causes osteoporosis.

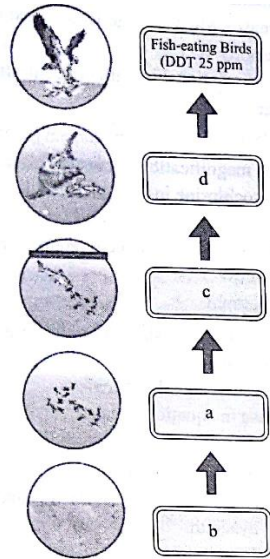
(C) Excess cadmium in drinking water may cause black foot disease.

(D) Methyl mercury in water may cause 'itai itai' disease.

104. Eutrophication is found in

- (A) Agricultural land near thermal plant      (B) Saline soil  
 (C) **Lake**      (D) Mountain

105. Recognise the figure and find out the correct matching.



- (A) a – phytoplankton, b – 0.003 ppm, c – 0.5 ppm, d – large fish  
 (B) a – phytoplankton, b – 0.003 ppb, c – 0.5 ppb, d – whale  
 (C) **a – zooplankton, b – 0.003 ppb, c – 0.5 ppm, d – large fish**  
 (D) a – zooplankton, b – 0.00. ppb, c – 0.5 ppb, d – large fish

106. More than 70% of world's fresh water is contained in

- (A) **Polar ice**      (B) Antarctica  
 (C) Green land      (D) Glaciers and mountains

107. Process by which insecticides like DDT reach man is

- (A) Bioaccumulation      (B) **Biomagnification**  
 (C) Bioremediation      (D) Eutrophication

108. High amount of Esherichia coli in water is indicator of

- (A) Hardness of water      (B) Industrial pollution  
 (C) **Sewage pollution**      (D) Presence of chlorine in water

109. Eutrophication of water bodies to killing of fishes is mainly due to

- (A) Non-availability of oxygen (B) Non-availability of light  
(C) Non-availability of food (D) Non-availability of essential minerals

110. Match the columns

	Column I		Column II
a.	Arsenic	1.	Minamata disease
b.	Nitrate	2.	Itai-itai
c.	Mercury	3.	Blue-baby syndrome
d.	Cadmium	4.	Sketetal fluorosis
e.	Fluoride	5.	Black foot disease

(A) (a) – (5), (b) – (3), (c) – (1), (d) – (2), (e) – (4)

(B) (a) – (2), (b) – (3), (c) – (5), (d) – (1), (e) – (4)

(C) (a) – (3), (b) – (4), (c) – (5), (d) – (1), (e) – (2)

(D) (a) – (5), (b) – (4), (c) – (3), (d) – (2), (e) – (1)

111. High BOD indicates

- (A) Highly polluted water (B) Less pollution in water  
(C) Less sewage (D) Less microorganisms

112. Gastrointestinal problems are caused by

- (A) Acid rain (B) Water pollution  
(C) Soil pollution (D) Sound production

113. A water body has high BOD indicating that water is

- (A) Being contaminated with sewage (B) Being aerated  
(C) Receiving minerals (D) Atrophic

114. Cause of decline in population of reptile and birds is

- (A) Bioinsecticides (B) Biofertilizers  
(C) DDT (D) Both A and B

115. Biomagnification refers o

- (A) Rapid growth due to excessive intake of nutrients
- (B) Increase in population size
- (C) Decrease in population size
- (D) Increase in concentration of non-degradable pollutants as they pass through food chain

116. Fish die in water bodies polluted by sewage due to

- (A) Pathogens
- (B) Clogging of gills by silt
- (C) Reduction in oxygen
- (D) Foul smell

### **TOPIC 3: Solid Wastes, Agro-Chemicals and Their Effects, Radioactive Wastes**

#### **Case Study of Remedy for Plastic Waste, Case Study of Organic Farming**

117. Everything that goes out in trash is called

- (A) Sanitary landfills
- (B) Solid wastes
- (C) Electronic wastes
- (D) Radioactive wastes

118. Wastes from homes, stores, schools, hospitals that are collected and disposed by the municipality are called

- (A) Municipal solid wastes
- (B) Sanitary landfills
- (C) Electronic wastes
- (D) Open dumping

119. Which were adopted as the substitute for open burning dumps?

- (A) Sanitary landfills
- (B) Earmuffs
- (C) Incinerators
- (D) Cyclone collectors

120. All wastes that we generate can be categorized into

- (A) Two types
- (B) Three types
- (C) Four types
- (D) Five types

121. The type of hazardous wastes generated by hospitals includes

- (A) Disinfectants
- (B) Harmful chemicals
- (C) Pathogenic micro-organisms
- (D) All of the above

122. Which of the following method is crucial for disposal of hospital waste?

- (A) Incinerators (B) Landfills  
(C) Ecological Sanitation (D) Both A and B

123. E-wasters are disposed off by

- (A) Incinerators (B) Landfills  
(C) Ecological Sanitation (D) Both A and B

124. A plastic sac manufacturer in Bangalore/Bengaluru that has managed to find the ideal solution to the ever increasing problem of accumulation plastic waste, is

- (A) Ramesh Chandra Dagar (B) Ahmad Khan  
(C) Sundar Lal Bahuguna (D) Ahmed Khan

125. A fine powder of recycled modified plastic that was developed by the company of Ahmed Khan is called

- (A) Bitumen (B) Polyblend  
(C) Bitumen (D) Asphalt

126. Ahmed Khan works by collaboration with

- (A) R.V. College of Engineering (B) Bangalore city Corporation  
(C) Humboldt State University (D) Both A and B

127. Ahmed Khan proved that the blends of polyblend and bitumen, when used to lay roads, enhanced the bitumen's water repellent properties and helped to increase road life by factor of

- (A) Two (B) Three  
(C) Four (D) Six

128. The raw material for creating polyblend is

- (A) Bitumen (B) Bitumin  
(C) Any plastic film waste (D) Both A and C

129. Fill in the blanks:

1. Against the price of Rs. ...a... per kg that rag pickers

Had been getting for plastic waste, Ahmed Khan offers them Rs. ...b...

2. Using Khan's technique, by the year ...c..., more than ...d... km of road in Bangalore/Bengaluru already been laid

(A)  $a = 0.04$ ,  $b = 6$ ,  $c = 2006$ ,  $d = 60$

(B)  $a = 0.60$ ,  $b = 4$ ,  $c = 2002$ ,  $d = 40$

(C)  $a = 0.04$ ,  $b = 6$ ,  $c = 2002$ ,  $d = 40$

(D)  $a = 0.40$ ,  $b = 4$ ,  $c = 2002$ ,  $d = 40$

130. Integrated organic farming is a

(A) Cyclical procedure

(B) Zero waste procedure

(C) Procedure where products from one process are cycled in as nutrients for other processes.

(D) All of the above

131. Ramesh Chandra Dagar includes many process in a chain like manner which support each other and allow an extremely economical and sustainable venture. He includes

a. Agriculture

b. Bee-keeping/apiculture

c. Composting

d. Dairy management/dairying

e. Water harvesting

(A) a, b and c

(B) c, d and e

(C) a, b, c and d

(D) a, b, c, d and e

132. Haryana Kisan Welfare Club was created by

(A) Ahmed Khan

(B) Ramesh Chandra Dagar

(C) Sundar Lal Bahuguna

(D) State Government

133. The current membership of the Haryana Kisan Welfare Club is

(A) 500 farmers

(B) 5000 farmers

(C) 50,000 farmers

(D) 1000 farmers

134. Initially, nuclear energy was hailed as a

(A) Non-polluting way for generating electricity

(B) Polluting way for generating electricity

(C) Non-polluting way for generating radioactivity

(D) Pollution way for generating radioactivity

135. The use of the nuclear energy has two very serious inherent problems. The first is

(A) Highly energetic and the second is polluting the environment

**(B) Accidental leakage and the second is safe disposal of radioactive wastes**

(C) Accidental leakage and the second is the highly polluting

(D) Highly polluting and safe disposal of radioactive wastes

136. Accidental leakage from the nuclear power plant has been occurred in the

(A) Chernobyl incidents

(B) Three Mile Island

(C) Rohtang pass

**(D) Both A and B**

137. It has been recommended that storage of nuclear waste after sufficient pretreatment should be done in suitably shielded containers buried within rocks about

(A) 50 m deep

(B) 100 m deep below ocean bed

**(C) 500 feet deep**

(D) 500 m deep

138. In the textbook you came across Three Mile Island and Chernobyl disasters associated with accidental leakage of radioactive wastes. In India we had Bhopal gas tragedy. It is associated with which of the following

(A) CO<sub>2</sub>

**(b) Methyl Iso-cyanate**

(C) CFC's

(D) Methyl Cyanate

139. Eco San toilets are working in many areas of

(A) Assam and West Bengal

**(B) Kerala and Sri Lanka**

(C) Maharashtra and Andhra Pradesh

(D) Karnataka and Sri Lanka

#### **TOPIC 4: Greenhouse Effect and Global Warming**

140. The term Greenhouse effect has been derived from a phenomenon that occurs in a

(A) House which is painted by green colour

**(B) Greenhouse, that looks like a small glass house**



(C) Green house, which is covered by green glass panels that does not allow the light to lets in

(D) Both B and C

141. Greenhouse is used for growing plants especially during

(A) Summer

(B) Winter

(C) Rainy season

(D) Any of the above

142. The greenhouse effect is a naturally occurring phenomenon that is responsible for heating of earth's surface and atmosphere. Without greenhouse effect the average temperature at surface of earth would have been

(A)  $-15^{\circ}\text{C}$

(B)  $15^{\circ}\text{C}$

(C)  $-18^{\circ}\text{C}$

(D)  $18^{\circ}\text{C}$

143. The present day average temperature of the Earth's surface is

(A)  $25^{\circ}\text{C}$

(B)  $18^{\circ}\text{C}$

(C)  $15^{\circ}\text{C}$

(D)  $35^{\circ}\text{C}$

144. Fill in the blanks, according to the Greenhouse effect.

1. Clouds and gases reflect about ...a... of the incoming solar radiation, and absorb some of it but almost ...b... of incoming solar radiation falls on Earth's surface heating it, while a small proportion is reflected back.

2. Earth's surface re-emits heat in the form of ...c... radiation but part of this does not escape into space at atmospheric gases absorb a major fraction of it.

(A) a – one half, b – one fourth, c – UV radiation

(B) a – one fourth, b – one half, c – UV radiation

(C) a – one half, b – one fourth, c – infrared radiation

(D) a – one fourth, b – one half, c – infrared radiation

145. Infrared radiation are

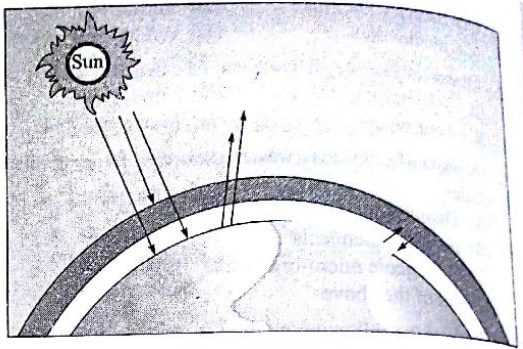
(A) Long wave radiation

(B) Short wave radiation

(C) Medium wave radiation

(D) Visible radiation

146. The following figure shows the phenomenon of



- (A) Greenhouse effect (B) Ozone layer depletion  
(C) Deforestation (D) Eutrophication

147. Increase in level of greenhouse gases has led to considerable heating of Earth leading to

- (A) Ozone depletion (B) Skin cancer  
(C) Global warming (D) Both A and B

148. During the past century, the temperature of Earth has increased by

- (A) 0.6°C, most of it during the last two decades  
(B) 0.5°C, most of it during the last two decades  
(C) 0.6°C, most of it during the last three decades  
(D) 0.5°C, most of it during the last decades

149. Global warming leads to

- (A) Deleterious changes in the environment and resulting in odd climatic change (e.g. El Nino effect)  
(B) Increased melting of polar ice caps and Himalayas snow caps  
(C) Rise in the sea level that can submerge many coastal areas.  
(D) All of the above

150. The measures that can be taken to control the global warming

- (A) Planting trees  
(B) Slowing down the growth of human population  
(C) International initiatives are also being taken

(D) All of the above

151. Which is not correct approach to reduce global warming

(A) Cutting down use of fossil fuel

(B) Reducing deforestation

(B) Improving efficiency of energy usage

(D) Cutting trees and increasing growth of human population.

152. Greenhouse effect is warming due to

(A) Infra-red rays reaching earth

(B) Moisture layer in atmosphere

(C) Increase in temperature due to increase in carbon dioxide concentration of atmosphere

(D) Ozone layer of atmosphere

153. Which greenhouse gas other than methane is being produced by agricultural fields?

(A) Nitrous oxide

(B) Ammonia

(C) Sulphur dioxide

(D) Arsenic

154. Warm ocean surge or Peru current that recurs after 5 – 8 years in East Pacific along South America is

(A) El Nino

(B) Aye Aye

(C) Mangox

(D) Gulf Stream

155. Methane gas producing field is

(A) Wheat field

(B) Paddy field

(C) Cotton field

(D) Groundnut field

156. Maximum, greenhouse gases are released by

(A) India

(B) Britain

(C) U.S.A.

(D) France

157. Greenhouse effect is due to

(A) X-rays

(B) UV rays

(C) Green rays

(D) Infra – red rays

158. Greenhouse effect is related to

(A) Increased growth of green algae

(B) Global warming

(C) Cultivation of vegetables in houses

(D) Development of terrace gardens

159. Which one of the following is mismatched?

(A) Fossil fuel burning – Release of  $\text{CO}_2$

(B) Nuclear power – Radioactive wastes

(C) Solar energy – green house effect

(D) Biomass burning – Release of  $\text{CO}_2$ .

160.  $\text{CO}_2$ ,  $\text{CH}_4$ ,  $\text{N}_2\text{O}$ , CFCs are called green house gasses because they can absorb

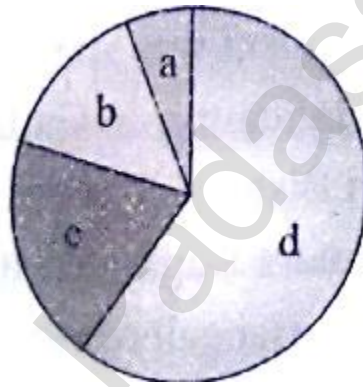
(A) Ultraviolet radiations

(B) Long wave infra-red radiations

(C) Visible light radiation

(D) X-ray radiation.

161. Recognise the figure and find out the correct matching.



(A) c – CFCs, a –  $\text{N}_2\text{O}$ , d –  $\text{CO}_2$ , b –  $\text{CH}_4$

(B) a – CFCs, a –  $\text{N}_2\text{O}$ , d –  $\text{CO}_2$ , c –  $\text{CH}_4$

(C) b – CFCs, a –  $\text{N}_2\text{O}$ , c –  $\text{CO}_2$ , d –  $\text{CH}_4$

(D) b – CFCs, a –  $\text{N}_2\text{O}$ , d –  $\text{CO}_2$ , c –  $\text{CH}_4$

162. The reason for greenhouse effect is

(A) Higher  $\text{CO}_2$  concentration causing global warming.

(B) Absorption of infra-red rays by gases and dust particles.

(C) Both A and B

(D) Refraction of  $\text{CO}_2$

163. Checking of reradiating heat by atmospheric dust,  $\text{O}_3$ ,  $\text{CO}_2$  and water vapours is

- (A) Ozone layer effect (B) Radioactive effect  
 (C) Greenhouse effect (D) Solar effect

164. In Kyoto protocol, the major nations agreed to reduce emission of greenhouse gases by

- (A) 2008 (B) 2010  
 (C) 2012 (D) 2018

165. Increase in atmospheric temperature due to CO<sub>2</sub> is

- (A) Pasteur effect (B) Blackman effect  
 (C) Emerson effect (D) Greenhouse effect

**TOPIC 5: Ozone Depletion In the Stratosphere.**

166. Good ozone and bad ozone is found respectively in

- (A) Troposphere and Stratosphere  
 (B) Stratosphere and troposphere  
 (C) Upper part of atmosphere and lower atmosphere  
 (D) Both B and C

167. The ozone hole over Antarctica develops each year between

- (A) Late August and early October (B) Early August and late October  
 (C) Late August and late October (D) Early August and early October.

168. UV radiation of wavelengths shorter than UV-B are almost completely absorbed by Earth's atmosphere, given that the ozone layer is intact. But UV-B damages DNA and mutation may occur. It causes

- (A) Ageing of skin (B) Damage to skin cells  
 (C) Various types of skin cancers (D) All of the above

169. In human eye cornea absorb UV-B radiation and a high dose of UV-B causes

- (A) Inflammation of cornea (B) Cataract  
 (C) Permanently damage to cornea (D) All of the above.

170. What does the mean of snow blindness?

- (A) Inflammation of cornea (B) Infection of cornea  
(C) Blindness due to genetic reason (D) Colour blindness

171. Recognizing the deleterious effects of ozone depletion, an international treaty known as the Montreal protocol, was signed at

- (A) Canada (B) Japan  
(C) South Africa (D) Brazil

172. Ozone prevents the entry of

- (A) Infrared rays (B) Visible rays  
(C) UV rays (D) X-rays

173. Global agreement to reduce release of ODS is

- (A) Vienna Convention (B) Rio de Janeiro Conference  
(C) Kyoto protocol (D) Montreal protocol

174. Thickness of ozone in column of air from ground to top of atmosphere is measured in terms of

- (A) Decibel units (B) Pascal units  
(C) Svedberg units (D) Dobson units

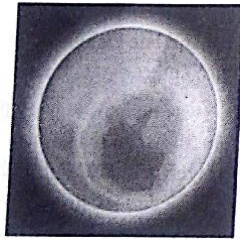
175. Freon gas causing stratosphere O depletion is mainly released from

- (A) Refrigerators (B) Automobiles  
(C) Thermal power plants (D) Steel industry

176. A chemical used in refrigerators and air conditioners and is a source of Cl

- (A) Benzene (B) CH<sub>4</sub>  
(C) Benzopyrene (D) Freon

177. The following figure shows the



- (A) Ozone hole (B) Greenhouse effect  
(C) Global warming (D) El Nino effect

178. Ozone hole enhances

- (A) UV radiations reaching earth (B) Number of characters  
(C) Skin cancers (D) All the above

179. Identify the correctly matched pair.

- (A) Basel convention – Biodiversity conservation  
(B) Kyoto protocol – Climate change  
(C) Montreal protocol – Global warming  
(D) Ramsar convention – Ground water pollution

180. Ozone hole is maximum over

- (A) Europe (B) Antarctica  
(C) India (D) Africa

181. Melanin protects us from

- (A) X – rays (B) Infrared rays  
(C) Visible rays (D) UV rays

182. Ozone hole refers to

- (A) Hole in ozone layers  
(B) Reduction in thickness of ozone layer in stratosphere  
(C) Reduction of thickness of ozone in troposphere

(D) Increase concentration of ozone

183. Result of ozone hole is

(A) Greenhouse effect

(B) Global warming

(C) Acid rain

(D) UV radiations reach the earth

184. Ultraviolet radiations from sunlight causes reaction which produces

(A) O<sub>3</sub>

(B) SO<sub>2</sub>

(C) CO

(D) CH<sub>4</sub>

185. Depletion of ozone layer is due to

(A) Oxides of nitrogen

(B) Oxides of carbon

(C) Oxides of sulphur

(D) None of the above

186. Ozone day is

(A) January, 30

(B) September, 16

(C) April, 21

(D) December, 25

187. In coming years, skin related disorders will become --- common due to

(A) Excessive use of detergents

(B) Water pollution

(C) Air pollution

(D) Depletion of ozone layer

188. Country contributed maximum to hole formation a ozone layer is

(A) U.S.A

(B) Russia

(C) Germany

(D) Japan

#### **TOPIC 6: Degradation by Improper Resources Utilization and maintenance, Deforestation**

#### **Case Study of People's Participation in Conservation of Forests**

189. First Chipko movement was started by

(A) Sundar Lal Bahuguna, in Garhwal, Himalaya, 1974

(B) Amrita Devi Bishnoi, 1731

(C) Ramesh Chandra Dagar, Sonipat Haryaya, 1973



(D) Ahmed Khan, Bangalore city, 1986

190. The degradation of natural resources can occur by

- (A) The action of pollutants (B) The improper utilization of resources  
(C) Proper utilization practices (D) Both A and B

191. The fertile top soil can be removed by/soil erosion is due to

- a. Over-cultivation  
b. Unrestricted grazing  
c. Afforestation  
d. Poor irrigation practices

- (A) a, b and c (B) a, b and d  
(c) b, c and d (D) a, b, c and d

192. Desertification is a major problem now-a-days, particularly due to

- (A) Increased deforestation (B) Increased afforestation  
(C) Increased population (D) Increased urbanization

193. Irrigation without proper drainage of water leads to

- (A) Desertification (B) Soil erosion  
(C) Waterlogging (D) All of the above

194. Waterlogging and soil salinity are some of the problems that have come in the wake of the

- (A) Population explosion (B) Green Revolution  
(C) Soil erosion and desertification (D) All of the above

195. Conversion of forested areas to non-forested ones is called

- (A) Afforestation (B) Reforestation  
(C) Deforestation (D) Both A and C

196. Fill in the blanks

1. According to an estimate, almost ...a... per cent forests have been lost in the tropics, compared to ...b... per cent in the temperate region.

2. At the beginning of the twentieth century, forests covered about ...c... per cent of the land of India. By the end of the century, it shrunk to ...d... per cent.

3. National forest Policy (1988) of India has recommended ...e... per cent forest cover for the plains and ...f... percent for the hills.

(A) a – 1, b – 40, c – 33, d – 18, e – 30, f – 67

**(B) a – 40, b – 1, c – 30, d – 19.4, e – 67, f – 33**

(C) a – 1, b – 40, c – 30, d – 19.4, e – 33, f – 67

(D) a – 40, b – 1, c – 33, d – 19.4, e – 33, f – 67

197. What are the major reasons of deforestation?

(A) Conversion of forest to agricultural land

(B) Trees are axed for timber, cattle ranching and firewood

(C) Slash and burn cultivation

**(D) All of the above**

198. Jhum cultivation is prevalent in

**(A) North-eastern states of India**

(B) South-eastern states of India

(C) North-western states of India

(D) South-western states of India

199. The consequences of the deforestation are

a. Disturbing hydrologic cycle

b. Causes soil erosion

c. May lead to desertification in extreme cases

d. Enhanced carbon dioxide concentration in atmosphere

(A) a, b and c

(B) a, c and d

(C) a, c and d

**(D) a, b, c and d**

200. The process of restoring a forest that one existed but was removed at some point of time in the past, is called

**(A) Reforestation**

(B) Afforestation

(C) Deforestation

(D) Both A and B

201. Government of India has recently instituted an award for the individuals or communities from rural areas that have shown extraordinary courage and dedication in protecting wildlife. This award is

(A) Environmental Ministry Wildlife Protection Award

**(B) Amrita Devi Bishnoi Wildlife Protection Award**

(C) Sanjay Gandhi Wildlife Protection Award

(D) All of the above

202. Realizing the significance of participation by local communities the Government of India has introduced the concept of

(A) Jhum Cultivation

(B) Jhum Forest Management (JFM)

(C) Joint Farmer Management

**(D) Joint Forest Management**

203. Two major environmental issues of global nature are

(A) Soil erosion and desertification

(B) Waterlogging and soil salinity

**(C) Global warming and ozone depletion**

(D) Desertification and urbanisation

204. Match the column I and II, and choose the correct combination from the options given.

	Column I		Column II
a.	Catalytic converter	1.	Particulate matter
b.	Electrostatic precipitator	2.	Carbon monoxide and nitrogen oxides
c.	Earmuffs	3.	High noise level
d.	Landfills	4.	Solid wastes

(A) a – 2, b – 3, c – 1, d – 4

(B) a – 3, b – 4, c – 2, d – 1

**(C) a – 2, b – 1, c – 3, d – 4**

(D) a – 1, b – 2, c – 3, d – 4

205. Which is wrong?

(A) Most forests have been lost in tropical areas

(B) Greenhouse effect is natural phenomenon

**(C) Ozone in upper part of atmosphere is harmful to animals**

(D) Eutrophication is natural phenomenon in fresh water bodies.

206. Deforestation will decrease

- (A) Soil erosion
- (B) Land slides
- (C) Soil fertility
- (D) Rainfall

207. Removal of top fertile soil by wind or water is

- (A) Siltation
- (B) Soil erosion
- (C) Weathering of soil
- (D) Leaching

208. Main cause of soil erosion is

- (A) Afforestation
- (B) Less rains
- (C) Thinning of ozone layer
- (D) Deforestation

209. Forests take part in

- (A) Control of atmospheric pollution
- (B) Prevention of soil erosion
- (C) Maintenance of natural balance
- (D) All the above

210. Forests destruction result in

- (A) Loss of wild life
- (B) Floods and drought
- (C) Soil erosion
- (D) All the above