

# BIOLOGY

Board – ICSE

Class – 10

Topic – Pollution

**1. Fill in the blanks:**

- (i) Global warming is caused due to \_\_\_\_\_ concentration of CO<sub>2</sub> in air.
- (ii) Petrol engine gives off gaseous oxides of \_\_\_\_\_.
- (iii) The \_\_\_\_\_ is the layer of the atmosphere that contains the protective ozone layer.
- (iv) Rain that is more acidic than normal is called \_\_\_\_\_.

**Answers:**

- (i) Increased
- (ii) Nitrogen
- (iii) Stratosphere
- (iv) Acid rain

**2. True or false. If false rewrite the wrong statement in its correct form:**

- (i) Sources of groundwater pollution include leaking sewer lines, pumping wells, landfills, fertilizer, and sludge.
- (ii) The only health effect of ground-level ozone pollution is coughing.
- (iii) Benzene, chloroform, and vinyl chloride are so-called inorganic pollutants.
- (iv) Indoor pollution is 10 times more toxic than outdoor pollution.

**Answers:**

- (i) True
- (ii) False, it can also affect our lungs—it can make it harder to breathe, and make asthma worse.
- (iii) False, these are organic pollutants.
- (iv) True

**3. Match the column:**

Column A	Column B
(i) Ozone hole	(a) Release of methane
(ii) Acid rain	(b) Chlorofluorocarbons
(iii) Melting of permafrost	(c) Affects oxygen transport by blood
(iv) Carbon monoxide	(d) Erodes of buildings

**Answers:** (i) (b), (ii) (d), (iii) (a), (iv) (c).

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## 4. Multiple choice questions:

(i) Air is composed of gases, water vapors and:

- a) Dust particles
- b) Rainfall
- c) Snowfall
- d) Light

(ii) Ozone is abundant in this layer. Ozone heats this layer as it absorbs from incoming ultraviolet radiation from the sun:

- a) Thermosphere
- b) Troposphere
- c) Mesosphere
- d) Stratosphere

(iii) 71% of earth surface is covered with:

- a) Land
- b) Air
- c) Water
- d) Coal

(iv) Deforestation is one of the sources of pollution because:

- a) It increases the oxygen levels produced
- b) It decreases the oxygen levels produced
- c) It causes fertilizers to wash away in the water
- d) None of the above

## Answers:

- (i) Dust particles
- (ii) Stratosphere
- (iii) Water
- (iv) It decreases the oxygen levels produced

## 5. Give technical terms:

- (i) The pollutant which reduces the oxygen carrying capacity of blood.
- (ii) Any non-biodegradable pollutant.
- (iii) The pollution chiefly due to use of pesticides in agriculture.
- (iv) Bacteria breaking down dead organisms to liberate nitrogen.

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## Answers:

- (i) Carbon monoxide
- (ii) Plastic
- (iii) Soil pollution
- (iv) Denitrifying bacteria

## 6. Name the following:

- (i) Acid rainfall is involved with the (decreased, increased, normal) acidity in rivers, destroying aquatic animals.
- (ii) The pollution caused due to use of pesticides in agriculture.
- (iii) The UV rays cause (genetic, mentally, physical) disorders which ultimately affect heredity.
- (iv) What acts as a storage reservoir for water and other plant nutrients?
- (v) Which Gas is present in large amount in the upper part of stratosphere.

## Answers:

- (i) Increased
- (ii) Soil pollution
- (iii) Genetic
- (iv) Soil
- (v) Ozone

## 7. Explain the terms:

- (i) Noise pollution
- (ii) Particulate pollutant
- (iii) Ammonification
- (iv) Nitrification

## Answers:

- (i) The unfavorable alteration in the environment brought about by an unreasonably loud noise affecting our physical and mental health is called Noise Pollution.
- (ii) The solid pollutants are called particulate pollutant.
- (iii) The process of breaking down of proteins into ammonia is called Ammonification.
- (iv) The process of converting ammonia into nitrite and nitrates is called Nitrification.

## 8. It is mandatory to take a pollution certificate for the vehicles from the Traffic Police. Give reasons.

## Answers:

In cities, about 80% of the total air pollution is caused by automobiles (vehicles). Hence, to control air pollution, it is mandatory to take a pollution certificate for the vehicles from the traffic police.

**9. Use of pressure horn is prohibited in certain places. Give reasons.**

**Answers:**

The pressure horn Causes noise pollution which increases blood pressure, disturbs concentration, lowers working capacity and may lead to nervous disorders. Hence, use of pressure horn is prohibited Try certain places like near hospitals, schools and residential complexes etc.

**10. What is the effect of global warming?**

**Answers:**

Effects of global warming are:

- (i) As the increase in temperature will be uniform all over the surface of the world. There will be serious climatic changes. This will bring various changes in wind and rain pattern.
- (ii) Higher temperature will cause rise in transpiration. This in turn, will affect the groundwater table.
- (iii) As the climatic belts shift from equator towards pole, the vegetation would also shift away from the equator.
- (iv) Insects and pests will increase in the warmer climatic conditions. Thus, pathogenic diseases will multiply.

**11. What is the difference between stratospheric and ground level ozone?**

**Answers:**

Stratospheric ozone or good ozone is a layer surrounding the earth's atmosphere. It protects all life on earth from the damaging effects of the sun's rays. Ground level ozone is formed by a photochemical reaction between atmospheric oxygen ( $O_2$ ) and smog forming chemicals at the earth's surface, it is odorless and colorless, but can have profound effects on the human respiratory system.

**12. What are CFC's?**

**Answers:**

Chlorofluorocarbons (CFCs) are nontoxic, nonflammable chemicals containing atoms of carbon, chlorine, and fluorine. They are used in the manufacture of aerosol sprays, blowing agents for foams and packing materials, as solvents, and as refrigerants. CFC =

s react with sunlight in the earth's stratosphere to break down the protective ozone layer, a layer of gas that shields the earth's surface from damaging UV-B rays.

**13. What are the adverse effects of oil spill?**

**Answers:**

Replacement of coal by the oil fuel has increased the problem of pollution. The presence of oil in a water course is undesirable since it creates aesthetic problems. It has a tendency to spread over the surface of water; diffusion of oxygen into water is inhibited and re-aeration of water is affected.

**14. Name the major pollutants of air.**

**Answers:**

Major Pollutants of air are: Sulphur dioxide, nitrogen oxides, carbon dioxide, fly ash and suspended particulate matter (SPM).

**15. Describe the impact of air pollution?**

**Answers:**

Besides global warming, change in climate air pollution also has certain bad impact on the environment. Depletion of ozone layer intensifies ultraviolet (UV) radiation.

Intensified radiation will cause a significant increase in skin cancer and eventually have lethal effects on many organisms, including man. In plants such enhanced level of UV radiation are feared to cause stunted growth, short, thick stems, smaller leaves.\

**16. What are some types of pollutants found in water?**

**Answers:**

Disease-causing organism, pesticides and fertilizers, industrial chemicals, metals, radioactive, waste, petroleum products.

**17. How could warm water act as a pollutant?**

**Answers:**

Warm water is released by a factory into a nearby river or pond raises the temperature of the water causing thermal pollution, sometimes enough to harm the aquatic life forms.

**18. How is soil pollution caused?**

**Answers:**

Soil pollution usually results from the disposal of solid and semi-solid wastes in agricultural practices, industrial processes and insanitary habits.

## 19. What is radioactivity?

### Answers:

Some atoms (for instance uranium) are unstable and tend to change into other types of atoms. When they change them release energy and sometimes particles. These atoms are radioactive and the energy or particles released is radiation. Radiation can damage materials, including living tissue.

## 20. What is the effect of radiation on health?

### Answers:

Radiation can lead to severe health hazards. Effects of non-ionizing radiation at low level are uncertain but of ionizing radiation at high level can cause cancer and increase in chromosome damage.