

# Unit 18 (Pollution of Air and Water)

## Multiple Choice Questions (MCQs)

### Question1

Air is a mixture of various gases. One of the gas is 21% part of the air and is essential for the survival of human beings. This gas is

- (a) nitrogen (b) oxygen
- (c) ozone (d) argon

### Answer.

(b) Oxygen makes up about 21 % of air by volume. It is essential for the survival of human beings.

### Question2

Which of the following is not a source of air pollution?

- (a) Automobile exhaust
- (b) Burning of firewood
- (c) Windmill
- (d) Power plant

### Answer.

(c) Windmill is not a source of air pollution. It is regarded as an alternative source of energy.

### Question3

Boojho wishes to contribute in reducing air pollution. Which vehicle should he use for going to school?

- (a) Car
- (b) School bus
- (c) Autorickshaw
- (d) Scooter

### Answer.

(b) Boojho, if wishes to contribute in reducing air pollution, should use school bus for going to school. A school bus carry many children together, thus vehicular emissions are reduced.

**Question5**

Which of the following is not a way to conserve water?

- (a) Replace (b) Reduce
- (c) Reuse (d) Recycle

**Answer.**

(a) Replace is not a way to conserve water. At our individual level, we should consciously save water and not to waste it. Reduce, reuse and recycle should be our mantra.

**Question5**

The type of pollution which is likely to affect Taj Mahal in Agra to a greater extent is

- (a) air pollution (b) water pollution
- (c) soil pollution (d) noise pollution

**Answer.**

(a) The type of pollution which is likely to affect Taj Mahal in Agra to a greater extent is air pollution. It is affecting Taj Mahal by corroding it and yellowing its marble.

**Question6**

Incomplete combustion of fuel such as petrol and diesel gives

- (a) nitrogen oxide (b) sulphur dioxide
- (c) carbon monoxide (d) carbon dioxide

**Answer.**

(c) Carbon monoxide is produced by the incomplete combustion of fuels like wood, coal, kerosene, petrol and diesel.

**Question7**

The phenomenon of 'marble cancer' is due to

- (a) soot particles (b) CFCs
- (c) log (d) acid rain

**Answer.**

(d) The phenomenon of marble cancer is due to acid rain. Marble cancer is corrosion of buildings or monuments by acid rain.

**Question8**

Potable water is the water which is

- (a) obtained from a river (b) obtained from a lake
- (c) pure and fit for drinking (d) used only for washing clothes

**Answer.**

(c) Potable water is the water which is pure and fit for drinking. Water can be made potable by

various methods such as boiling, etc.

**Question9**

Which, of the following procedures will give you water free from all impurities?

- (a) Adding chlorine tablets (b) Distillation
- (c) Boiling (d) Filtration

**Answer.**

(c) When water is heated, it boils at a temperature of 100°C. At this high temperature, all the harmful microorganisms (or germs) present in water are killed and it becomes absolutely safe for drinking.

**Question10**

A pond contains clean water. Which of the following activities will produce least pollution of water?

- (a) Washing clothes in the pond (b) Bathing animals in the pond
- (c) Washing motor vehicles in the pond (d) Swimming in the pond

**Answer.**

(d) Swimming in the pond is the activity which will produce least pollution of water.

**Question11**

Trees help in reducing the pollution of our environment. Lakhs of trees are planted by people in the month of July every year. This occasion is called

- (a) Forest Conservation Day (b) Plantation month
- (c) Van Mahotsav (d) Wildlife week

**Answer.**

(c) Van Mahotsav is an occasion when lakhs of trees are planted in July every year.

**Question12**

Which of the following is not a greenhouse gas?

- (a) Nitrogen gas "
- (b) Water vapour
- (c) Methane gas
- (d) Carbon dioxide

**Answer.**

(a) Carbon dioxide, methane and water vapour are greenhouse gases. But the main constituents of the atmosphere nitrogen and oxygen are not greenhouse gases.

## **Very Short Answer Type Questions**

**Question13**

Name the chemicals which are used in refrigerators, air conditioners and damage ozone layer when released in air.

**Answer.**

Chlorofluorocarbons (CFCs) are the chemical compounds made of chlorine, fluorine and carbon elements, which are used in refrigerators, air conditioners and aerosol sprays, and damage ozone layer when released in air.

**Question14**

Name any two sources which cause air pollution due to Suspended Particulate Matter (SPM).

**Answer.**

Two sources which cause air pollution are as follows :

- (i) Automobiles which burn diesel and petrol, produce SPM which remain suspended in air and reduce visibility. When inhaled, they cause diseases.
- (ii) Industrial activities like manufacturing of steel and mining give out SPM which also pollute

the atmosphere.

**Question15**

Name two gases which\*are mainly responsible for acid rain.

**Answer.**

Sulphur dioxide and nitrogen dioxide are the two gases mainly responsible for acid rain.

**Question16**

The quality of air at various locations is monitored regularly by government and other agencies. In what way can you use these data?

**Answer.**

The quality of air at various locations is monitored regularly by government and other agencies. These data can be used to generate awareness about air pollution among people.

**Question17**

Combustion of fossil fuels generates a lot of air pollution. Can you suggest any two alternative sources of energy which do not cause any pollution?

**Answer.**

Combustion of fossil fuels generates a lot of air pollution. Solar energy and wind energy : are two alternative sources of energy which do not cause any pollution.

**Question18**

Name any two water pollutants which are toxic for .both plants and animals.

**Answer.**

Lead and arsenic are two water pollutants which are toxic for both plants and animals.

## **Short Answer Type Questions**

**Question19**

A lot of dry leaves are collected in a school garden and are burnt every day. Do you think that it is right to do so? If not, what should be done to dispose off the dry leaves?

**Answer.**

It is not right to burn dry leaves as it causes air pollution. The right way to dispose off the dry leaves is to convert them into compost by burying in a pit.

**Question20**

The level of air pollution is higher at a busy traffic intersection. Why?

**Answer.**

A large number of automobiles stop for a short period at red light throughout the day and release a large quantity of gases (due to burning of petrol and diesel) which create air pollution. Motor vehicles are the major cause of air pollution in big cities.

**Question21**

Fill in the blanks with the help of words given in bracket after each sentence.

(a) When air is contaminated by..... substances which have a ..... effect on both the..... and.....it is referred to as.....

(air pollution, harmful, living, unwanted, non-living, pollutants)

(b) Many.....are responsible for causing .....pollution. Petroleum .....are a major source of.....pollutants like.....and .....

(sulphur dioxide, refineries, industries, nitrogen dioxide, gaseous, liquid, people, air)

(c) ,While.....your teeth, leaving the.....running may waste several.....of Water.

(tap, litres, brushing, washing, drops)

(d) Water which is suitable for ..... is called..... water.

(washing, bathing, drinking, potable, soft)

(e) Water which looks clean still has disease carrying.....and .....impurities.  
(insects, microorganisms, particles, dissolved, harmful)

**Answer.**

(a) When air is contaminated by **unwanted** substances which have a **harmful** effect on both the **living** and **non-living**, it is referred to as air **pollution**.

(b) Many **industries** are responsible for causing **air** pollution. Petroleum **refineries** are a major source of **gaseous** pollutants like **sulphur dioxide** and **nitrogen dioxide**.

(c) While **brushing** your teeth, leaving the **tap** running may waste several **litres** of water.

(d) Water which is suitable for **drinking** is called **potable** water.

(e) Water which looks clean still has disease carrying **microorganisms** and **dissolved** impurities.

#### Question22

Match the items of Column A with those of Column B.

Column A		Column B	
(a)	Sulphur dioxide	(i)	Damage ozone layer
(b)	Carbon dioxide	(ii)	Reduces oxygen carrying capacity of blood
(c)	Carbon monoxide	(iii)	Acid rain
(d)	Chlorofluorocarbons	(iv)	Greenhouse gas

**Answer.**

The correct matching is as given :

(a)–(iii), (b)–(iv), (c)–(ii), (d)–(i)

#### Question23

State whether the following statement are True/False.

(i) We can survive for sometime without air but we cannot survive even for a few minutes without food.

(ii) A brick kiln emits lot of smoke and other harmful gases causing air pollution.

(iii) Carbon monoxide is produced by complete burning of fuels such as coal, petrol, diesel.

(iv) Chlorination is a commonly used chemical method for killing germs in water.

(v) Water which is suitable for drinking is called soft water.

**Answer.**

(i) False, we can survive for some time without food but we cannot survive even for a few minutes without air.

(ii) True

(iii) False, carbon monoxide is produced by incomplete burning of fuels such as coal, petrol, diesel.

(iv) True

(v) False, water which is suitable for drinking is called potable water.

#### Question24

In the following statements, the underlined words are jumbled up. Write them in their correct form.

(a) Air contains 78% ginroten and 21% gonexy.

(b) Vehicles produce high level of pollutants like carbon dioxide, nitrogen oxides, nobrac moondexi and mosek.

(c) Carbon dioxide, thaneme, nitrous oxide and water vapour are known as heengrouse sesga.

(d) Gangotri glacier in Himalaya has started melting because of lablog ringwam.

(e) Whenever harmful substances such as wagese, toxic chemicals, silt, etc get mixed with water, the water becomes potdulle.

**Answer.**

- (a) nitrogen, oxygen (b) carbon monoxide, smoke
- (c) methane, greenhouse gases (d) global warming
- (e) sewage, polluted

## Long Answer Type Questions

### Question25

What do CFCs stand for? Name some devices where CFCs are used. Why CFCs are considered as pollutants?

**Answer.**

CFCs stands for chlorofluorocarbons. These are the chemical compounds made of chlorine, fluorine and carbon elements. CFCs are used in refrigerators, air conditioners and aerosol sprays.

CFCs are considered as pollutants because these are depleting the useful ozone layer of the upper atmosphere. This happens as follows :

CFCs released into the air, goes up and ultimately reach high into the atmosphere where the protective ozone layer exists. The chlorofluorocarbons reacts with ozone gas of ozone layer and destroy it gradually.

This allows the harmful ultraviolet rays of the sun to reach on the earth and can cause skin cancer, cataract and destruction of plants, including crops.

### Question26

Why is it advised that industries should switch over to cleaner fuels such as CNG and LPG in the Taj Mahal zone in Agra?

**Answer.**

Pollutants in air are discolouring white marble of Taj Mahal. The Mathura Oil Refinery near Agra as well as various industries in and around Agra are emitting gaseous pollutants such as sulphur dioxide and nitrogen dioxide into the air which cause acid rain.

Acid rain react with the carbonates present in marble (calcium carbonate) and limestone of a monument and corrode it slowly (dissolve it slowly).

### Question27

It is said, 'CO<sub>2</sub> contributes to global warming.' Explain.

**Answer.**

Plants utilise CO<sub>2</sub> from the atmosphere for photosynthesis, thereby decreasing the amount of CO<sub>2</sub> in the air. Deforestation leads to an increase in the amount of CO<sub>2</sub> in the air because the number of trees which consume CO<sub>2</sub>, is reduced.

Human activities, thus contribute to the accumulation of CO<sub>2</sub> in the atmosphere. CO<sub>2</sub> traps heat and does not allow it to escape into space.

As a result, the average temperature of the earth's atmosphere is gradually increasing. This is called global warming. Thus, increased CO<sub>2</sub> contributes to global warming.

### Question28

We should plant trees and nurture the ones already present in the neighbourhood. Why?

**Answer.**

We should plant more trees and also nurture the existing trees in our neighbourhood because trees reduce air pollution by absorbing excess carbon dioxide from the air. Thus, planting more trees will mitigate global warming.

All of us should participate in programmes such as Van Mahotsav in which lakhs of trees are planted in the month of July every year.

### Question29

Explain the traditional ways of purifying water to make it fit for drinking.

**Answer.**

The various traditional ways of purifying water to make it fit for drinking are as follows:

(i) By filtering This is a physical method of removing impurities. A popular household water filter is a candle type water filter.

(ii) By boiling When water is heated, it boils at a temperature of 100°C. At this high temperature, all the harmful microorganisms (or germs) present in water are killed and it becomes absolutely safe for drinking. Many households use boiling as a method for obtaining safe drinking water.

(iii) Chlorination It is a commonly used chemical method for purifying water. It is done by adding chlorine tablets or bleaching powder to the water. Chlorine kills all the harmful microorganisms (or germs) present in water and makes it absolutely safe for drinking.

### Question30

How can we reduce, reuse and recycle water?

#### Answer.

The various ways to conserve water (or save water) at home are as follows:

(i) Reduce While brushing our teeth, bathing etc, we should not keep our taps on. We should turn off the tap immediately after use. The leaking taps should be repaired immediately.

(ii) Reuse Water used for washing vegetables, rice, pulses and fruits can be used for gardening.

(iii) Recycle Dirty water can be recycled after purification.

### Question31

Read the paragraph and answer the questions following it.

Water is essential for life. Without water there would be no life. We usually take water as granted for its purity, but we must ensure the quality of water. Pollution of water originates from human activities. Through different paths, pollution reaches to groundwater. Easily identified source or place of pollution is called as point source, e.g. municipal and industrial discharge pipes, where pollutants enter the water source. Non-point sources of pollution are those where a source of pollution cannot be easily identified, e.g. agricultural run-off, acid rain, etc.

(a) How do you classify the various sources of water pollution?

(b) What are the point sources of water pollution?

(c) Name any two non-point sources of water pollution?

#### Answer.

(a) Various sources of water pollution are classified as point sources and non-point sources.

(b) The sources or places of pollution which are easily identifiable are point sources of water pollution, e.g. factories, power plants, etc.

(c) Agricultural run-off and acid rain are non-point sources of water pollution.

### Question32

Complete the crossword puzzle with the help of clues given below:

#### Across

1. Pollutant which was used in refrigerators and air conditioners. (18)

3. Produced on incomplete combustion of fuels (14)

6. This chemical protects our crops and is washed into water bodies from the field. (9)

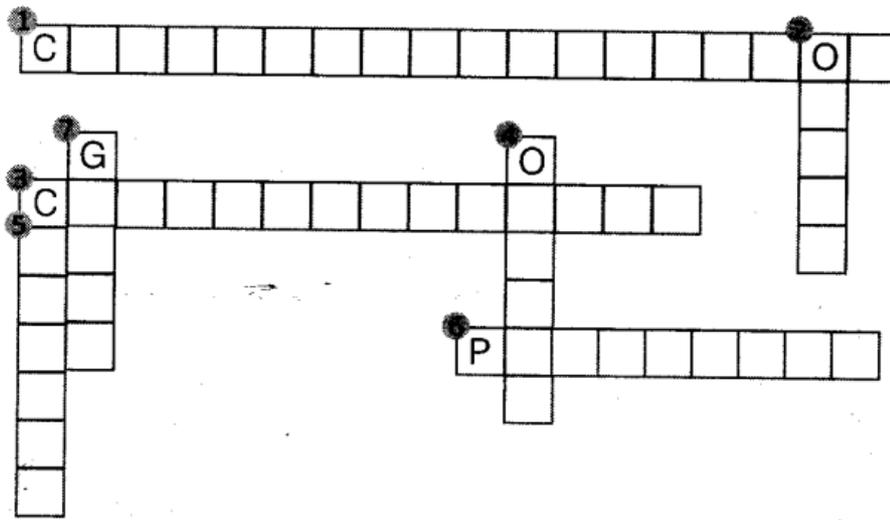
#### Down

2. This layer protects us from harmful ultraviolet rays. (5)

4. It is essential for combustion. (6)

5. Disease which is caused by drinking contaminated water. (7)

7. River which is famous in India and sustains most of the northern, central and eastern Indian population. (5)



Answer.

**Across**

1. Chlorofluorocarbon
3. Carbon monoxide
6. Pesticide
7. Ganga

**Down**

2. Ozone
4. Oxygen
5. Cholera

