EXERCISE

Q1. Select the right answer from the choices given with each question.

1. Air is polluted by:

a) Toxic materials
b) Hydrocarbons
c) Harmful gases
d) All of above

2. Which of following gas is not pollutant?

a) SO_2 b) CO c) CO_2 d) NO_2

3. Oxides of sulfur and nitrogen react with oxygen to form:

a) Bases b) Acids c) Salts d) All of above

4. Oxidizing smog consists of high concentration of:

a) SO_2 b) Ozone c) N02 d) C12

5. Thickness of ozone is:

a) 20-25KM b) 25-28Km c) 30-32Km d) 20-30Km

6. Ozone is destroyed by:

a) S02
b) NO2
c) Chlorofluorocarbons
d) None of above

7. In leather industry:

a) Chromium (IV) is used b) Chromium (III) is used

c) Nickel is used d) Aluminum is used

8. Water is purified:

a) Aeration b) Coagulation c) Disinfection d) All of above

9. The Ecosystem is the smaller unit of:

a) Biosphere b) Lithosphere

c) Atmosphere d) Hydrosphere

10. When chlorine is passed through water then the disinfection is done due to the production?

a) HCl b) HOCl c) OCl d) $HClO_4$

11. Peroxyacetyl nitrate (PAN) is an irritant to human beings and it affects

a) eyes b) ears c) stomach d) nose

12. Fungicides are the pesticides which

a) control the growth of fungus b) kill insects

c) kill plants d) kill herbs

Answer:

1)	d	2)	C	3)	b	4)	c
5)	a	6)	C	7)	b	8)	a
9)	a	10)	b	11)	a	12)	a

Q1. Select the right answer from the choices given with each question.

QI. What are components of environment?

Answer

I) Atmosphere 2) Hydrosphere

3) Lithosphere 4) Biosphere

Q2. Briefly discuss the role of atmosphere in our environment?

Answer

Our surrounding on earth is called atmosphere are very important because:

I) These gases absorb harmful radiations of sun to protect life on earth.

2) N_2 is used by nitrogen fixing bacteria.

3) O_2 is necessary for breathing.

4) CO_2 is necessary for photosynthesis.

Q3. What are sources of air Pollution?

Answer

Sources of air pollution are:

I) Nitrogen oxides (No and N02)

2) Volatile organic compounds (VOCs)

3) Oxides of sulphur (S02 and S03)

4) Carbon oxides (CO and C02)

Q4. What are the important air pollutants?

Answer

Important air pollutants are:

I) Nitrogen dioxide

2) Peroxyacetyl nitrates (PAN)

3) Volatile Organic Compounds

4) Carbon Monoxide releasing from automobiles

Q5. What are the sources of CO emission? Discuss its effects?

Answer

Source of CO

I) Incomplete combustion of fuel.

2) During reaction in blast furnace.

3) Burning of fossil fuels.

Effects

I) Causes Anoxia (Oxygen starvation)

2) Greenhouse effect.

3) Global Warming

Q6. Differentiate between:

a) **Industrial and Photochemical smog**

b) **Primary and secondary pollutants.**

Answer

a. Industrial Smog	**Photochemical Smog**
Smoke and sulphur dioxide produced from burning of coal when combine with fog it forms industrial smog.	Photochemical smog is formed when oxides of nitrogen and VOCs interact under sunlight.
b. Prima Pollutants	**Secondary Pollutants**
Oxides of nitrogen and volatile organic compounds are called primary pollutants.	When oxides of nitrogen and volatile organic compound interact under sunlight they form secondary pollutants.

Q7. How does photochemical smog differ from reducing smog?

Answer

Photochemical smog is a condition that develops when primary pollutants interact under the influence of sunlight while reducing smog is formed when smoke and sulphur dioxide produced from burning of coal combine with fog.

Q8. What is global warming?

Answer

When sunlight consists of ultraviolet rays, visible light and infra-red rays falls on the top of the atmosphere the harmful ultra-violets rays are absorbed by 03

layer and hence do not reach on the other hands, the visible light and infra-red rays pass through the C02 layer and fall on the earth. Since the infrared radiations have heating effect, they heat the earth and its objects. This is called Global Warming.

Q9. What are the latest predictions about global warming?

Answer

If the atmosphere contains too much quantity of C02, the temperature of the earth is increased too much. This melts all glaciers floods the low lying areas of the earth and changes the biological activity of oceans.

Q10. What gases are responsible for. Green House Effects?

Answer

These are as follows:

I) CO_2 and CO

2) Methane

3) CFCs

3) Nitrogen Oxides

11. Briefly discuss effects of acid rain.

Answer

Effects of acid rain

1) It makes lakes so acidic that they can no longer support fish life.

2) Causes extensive leaf-drop in plants.

3) It is very corrosive and attacks skin.

4) Fades the color of fabrics.

12. What are source' and environmental effects of:

a) vocs **b) PAN**

Answer

I) Evaporation of solvents

2) Evaporation of fuels.

3) Incomplete combustion of fossil fuels.

Environmental effects of VOCs

1) Eye irritation

2) Carcinogenic

3) Respiratory irritation

Source of PAN

Formed the reaction of NO_2 with VOCs.

Environmental Effects of PAN

I) Damaging to protein

2) Highly toxic to plants

3) Eye irritation

14. What are effects of excess of CO_2 present in atmosphere?

Answer

The excess of CO_2 present in atmosphere causes melting of glaciers, floods the low laying areas of earth and changes the patterns of cropping.

15. Discuss the sources and typical effects of CO_2 as pollutant.

Answer

Sources of SO_2

I) Volcanic Eruption

2) Burnt of oil and coal

3) When sulphide ores are roasted.

Effects:

I) Loss of green color in plants.

2) Fading of color of fabric.

3) Causes acid rain.

Q16. Briefly discuss the sources and typical effects of oxides of nitrogen.

Answer

Sources of Nitrogen Oxides:

I) Bacterial action in soil.

2) Forest fires.

3) Volcanic action.

Effects:

I) Heart and lung problems.

2) Suppress plant growth.

3) Decreased resistance to infection.

Q17. What is Ozone? How does it work as safeguard?

Answer

Ozone:

Ozone (O_3) is the protective layer in the atmosphere, at a high between 15km to 60km.

How does it safeguard:

When ultra-violet rays, visible light and infrared rays falls on the top of the atmosphere the harmful ultra-violet rays are absorbed by the 03 layer and hence do not reach the earth surface directly and thus safeguard us from these harmful radiation.

Q18. How Ozone is formed in stratosphere?

Answer

Formation of Ozone:

Ozone is produced in the upper part of the atmosphere by the action sunlight

on O_2. $3O_2 \rightarrow 2O_3$

Q19. What do you know about "Ozone hole"?

Answer

Ozone hole:

In 1985, scientists discovered that there is seven ozone depletion in Antarctic region.

The UNEP, has been addressing the issue of depletion of ozone layer since 1977 and in 1981 UNEP, Governing council set up a working group frame work for protection of ozone layer. No life is supported under the depleted ozone called ozone hole in Antarctic region.

Q20. How is ozone layer depleting?

Answer

Depletion of Ozone layer:

I) Oxides of Nitrogen in the atmosphere converts 03 into 02.

Example:

$NO + O3 \longrightarrow NO_2 + O_2$

$NO + O \longrightarrow NO_2$

2) Nuclear tests generate high temperature. At high temperature atmospheric nitrogen is favourably oxidized to NO. NO thus destroy Ozone layer.

3) Use of Chloro-Flouro carbons destroy ozone layer by decomposing 03 into 02.

Examples:

$Cl + O_3 \longrightarrow ClO + O_2$

$ClO + O_3 \longrightarrow Cl + 2O_2$

Q22. What should we do to save ozone?

Answer

I) Banned on the use of CFCs.

2) Use anti-knocking agent in the automobiles.

3) Industrial gases should be treated to non-toxic before exaction.

Q23. What is water pollution? Write different types of water pollutions?

Answer

Water Pollution:

The contamination of water with the substances which have adverse effects on human beings, animal and plants is called water pollution.

Water Pollutants:

I) Oil spillage.

2) Live-stock waste.

3) Industrial wastes.

4) Weather tanneries.

Q24. Briefly discuss the effects of water pollution?

Answer

Effects of Water Pollution:

Effects of Water Pollution are devastation. It effects entire life i.e. animals, humans and plants. Marine or fresh water life undergoes threatening condition or even they die similarly when waste mires with the drinking waters of humans and animals, it generates several diseases or even deaths in some cases.

Q25. How preliminary treatment of waste water is done?

Answer

Preliminary treatment is the treatment in which major conspicuous elements in the waste water is removed. It also involves the detoxification of waste water.

Q26. What is primary treatment of waste water?

Answer

Primary treatment involves the removal of sand particles are other particles which are conspicuous.

Q27. What is secondary treatment of waste water?

Answer

Secondary treatment involves

I) Solids removal

2) Oils and greases

3) Soft organics

4) Hard organics

5) Acid and Alkalis

6) Toxic Materials

Q28.How would avoid from thermal pollution?

Answer

We can avoid thermal pollution if electric generating companies decreases the temperature of water before releasing into the environment. Water is used in cooling their generators. As when hot water is released in water bodies, it

decreases the solubility of dissolved oxygen. Thus causes serious threat to life in water.

Q3. Give detailed answers of the following questions.

QI. Describe different chemical reaction occurring in our atmosphere.

Answer

Please see answer ofQ3. of chapter notes.

Q2. Write a comprehensive note on acid rain.

Answer

Please see answer of Q4. of chapter notes.

Q3. How would you control air pollution? Describe different methods.

Answer

Please see answer of Q6. of chapter notes.

Q4. What is Thermal Pollution? Discuss its sources and environmental effects.

Answer

Please see answer of Q8. of chapter notes.

Q5. What is waste water treatment? Discuss different methods of it.

Answer

Please see answer of Q9. of chapter notes.

Q6. Write a note on Green Chemistry.

Answer

Please see answer of QI 0. of chapter notes.