

CHEMISTRY

JEE MAIN AND ADVANCED

ENVIRONMENTAL CHEMISTRY

Assignment Section A Competition Level Questions

1. The layer of atmosphere which extends upto

10km from sea level is called

- A. Troposphere
- B. Stratosphere
- C. Ionosphere
- D. Mesophere

Answer: A



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2. Those pollutants which are readily degradable by natural process are called

A. Biodergradable pollutant B. Non-biodegradable pollutant C. Primary pollutant D. Secondary pollutant **Answer: A Watch Video Solution**

3. Troposphere pollutant contains.

A. Dust

C. Mist
D. All of these
Answer: D
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4. Which one of the following is a secondary
pollutant?
A. CO

B. Water vapours

B. O_3

C. Pb

D. CH_4

Answer: B



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5. Which one of the following pollutatns causes irritation in eye?

A. CO_2

B. SO_2

 $\mathsf{C}.\,NO_2$

D. All of these

Answer: B



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6. A primary pollutant is

A. CO

B. DDT

 $\mathsf{C}.\,CO_2$

D. All of these

Answer: D



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7. Which one of the following is colourless and highly toxic gas which reduces oxygen carrying capacity of blood?

A. SO_2

 $\mathsf{B.}\,CO$

C. *NO*

D. SO_3

Answer: B



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8. Which one of the following affects chlorophyll?

A. Sulphur dioxide

- B. Nitrogen oxides
- C. Carbon monoxide
- D. Both 1 and 2

Answer: A



- **9.** Which one of the following oxides produces brown air of reddish brown haze?
 - A. Oxides of sulphur

- B. Oxides of nitrogen
- C. Oxides of carbon
- D. All of these

Answer: B



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10. Which one of the following gaseous pollutants is carcinogenic?

A. Oxides of sulphur

- B. Oxides of nitrogen
- C. Arsenic
- D. Oxides of carbon

Answer: C



- 11. Greenhouse gases cause
 - A. Trap UV rays
 - B. Increase in temperature of atmosphere

C. Prevents global warming

D. All of these

Answer: B



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12. Greenhouse gas other than CO_2 is

A. H_2

B. N_2O

 $\mathsf{C}.\,O_2$

D. SO_2

Answer: B



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13. Photochemical smog invovles

A. O_3

B. NO

 $\mathsf{C}.\,NO_2$

D. All of these

Answer: D



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14. One of the greenhouse gas is

A. CO

 $B.O_2$

 $\mathsf{C}.\,H_2$

D. CFC'S

Answer: D

15. pH of acid rain is approximately

A. 5.6

B. 6.2

C. 6.7

D. 7

Answer: A



16. Which is not a cause of acid rain?

- A. NO_2
- B. CH_4
- $\mathsf{C}.\,SO_2$
- D. CO_2

Answer: B



17. Acid rain causes

- A. Chlorosis
- B. Increasing acidity of soil
- C. Corroding bridges
- D. All of these

Answer: D



18. Interference in development and maturation of RBC is caused by

- A. Hg pollution
- B. Pb pollution
- C. S pollution
- D. All of these

Answer: B



19. Select viable pollutant

- A. Smoke
- B. Moulds
- C. Mist
- D. Fumes

Answer: B



20. Which one of the following is not a property of classical smog?

A. Occurs at low temperature

B. Secondary pollutant play significant role

C. does not Contain SO_2

D. Dark brown coloured

Answer: B,C



21. Photochemical smog always contains

A. SO_2

B.NO

 $\mathsf{C}.\,Cl_2$

D. NO_2

Answer: B



22. Photochemical smog is actually a cause of pollution of

- A. Soil
- B. Air
- C. Noise
- D. Water

Answer: B



23. Photochemical smog includes the reduction of

A. SO_2

B. NO

 $\mathsf{C}.\,Cl_2$

D. NO_2

Answer: D



24. Earth is protected from UV rays by

A. N_2

 $B.O_2$

 $\mathsf{C}.\,O_3$

D. SO_3

Answer: C



25. Months in which ozone hole appears over poles is

- A. June-July
- B. August-September
- C. October-November
- D. December-January

Answer: B



26. Depletion of ozone layer can not cause

A. Damage of DNA

B. Skin cancer

C. Cataract

D. Rickets

Answer: D



27. Which one of the following gases is known as chemical weed in iroposphere?

- A. C_2H_6
- B. SO_2
- $\mathsf{C}.\,O_3$
- D. NO_2

Answer: C



- 28. Depletion of ozone layer causes
 - A. Increased transpiration
 - B. Damages paints and fibres
 - C. Causes aging of skin
 - D. All of these

Answer: D



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29. Which causes water pollution?

- A. Jet planes
- B. Herbicides
- C. Smoke
- D. Combustion of fossils

Answer: B



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30. Most common and commerical water pollutant is

A. Industrial waste
B. Fertilizers
C. Detergents
D. PCB's
Answer: A
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31. Clean water has BOD value:
A. 17ppm

- B. 12.2ppm
- C. 7ppm
- D. 5ppm

Answer: D



- **32.** Cause of eutrophication is
 - A. Nutrient enrichment of water bodies
 - B. Increase of oxygen in water bodies

- C. Increase in number of aquatic organisms
- D. All of these

Answer: A



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33. Inorganic pollutant can damage

- A. Centrel nervous system
- B. Liver
- C. Kidneys

D. All of these

Answer: D



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34. Decomposition of organic matter through microbial activity is known as

- A. Eutrophication
- B. Stratification
- C. Putrescibility

D. BOD

Answer: C



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35. Permissible level of nitrate ions in the drinking water is

- A. 40 ppm
- B. 50ppm
- C. 60ppm

D. 70ppm

Answer: B



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36. Tooth decay is caused by deficiency of

- A. Fluorides
- B. Lead
- C. Sulphates
- D. Nitrates

Answer: A



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37. Laxative effect is caused by

A. Nitrates

B. Sulphates

C. Lead

D. Fluoride

Answer: B

38. Soil pollution can result in decreased

- A. Soil productivity
- B. Quality of plants
- C. Purity of ground water
- D. All of these

Answer: D



39. Which one of the following is not an organochlorine?

- A. Parathion
- B. DDT
- C. BHC
- D. Aldrin

Answer: A



40. Which one of the following is least persistent insecticide?

- A. Aldrin
- B. Dieldrin
- C. BHC
- D. Carbamates

Answer: D



- **41.** Which one of the following is a herbicide?
 - A. Organochlorines
 - B. Organophosphates
 - C. Carbamates
 - D. Sodium arisinite

Answer: D



42. Non-biodergradable industrial waste that can be utilized by cement industry is

- A. Fly ash
- B. Slag
- C. Gypsum
- D. all of the above

Answer: D



43. Small quantity of industrial toxic waste is removed by

A. Bruning in open bins

B. Controlled incineration

C. Burning in closed bins

D. Both 1 and 2

Answer: A



- 44. Select non=biodegradable industrial waste
 - A. Waste from cotton mills
 - B. Waste from paper mills
 - C. Fly ash from thermal power plants
 - D. Waste from tood processing units.

Answer: C



45. Which one of the following is not a non-biodegradable industrial waste?

A. Gypsum from fertilizer industries

B. Mud and tailings from metal industries

C. Slag from stell industries

D. Waste from textile industries.

Answer: D



46. Biodegradable wastes are mixed with water and cultured from bacterial species which produces a gas called

- A. Methane gas
- B. Ethane gas
- C. Propane gas
- D. Butane gas

Answer: A



47. Sewage sludge does not contain	47.	Sewage s	sludge	does	not	contair
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- A. Nitrogen
- B. Phosphorus
- C. Potassium
- D. All of these

Answer: C



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48. Green chemistry emphasizes on

- A. Reaction that takes place in nonaqueous medium
- B. Utilization of science to reduce adverse impact on environment.
- C. Use of condensation polymers
- D. Minimise the use of non-hazardous waste.

Answer: B



49. In place of tetrachlorethene in dry-cleaning we use

- A. Sodium lauryl sulphate
- B. Sodium sterate
- C. Hydrogen peroxide
- D. Sodium bisulphite

Answer: C



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50. Chauvin, Grubbs and Schrock won 2005

Nobel prize for the development of

A. Dumas method

B. Kjeldahi's method

C. Metahesis method

D. Carius method

Answer: C



Assignment Section B Objective Type Question One Option Is Correct

1. Which air pollutant is not released by scooters and cars?

A. SO_2

B. Fly ash

C. Hydrocarbons

D. CO

Answer: B

2. Which is most harmful for the life on the globe?

A. Soil errosion

B. Increasing desert

C. Nuclear fall out

D. Deforestation.

Answer: C



3. The acid rain contains

- A. H_2SO_4
- B. HNO_3
- $\mathsf{C}.\,H_2SO_3$
- D. All of these

Answer: D



4.	Which	is	not	an	air	pol	lutant?
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- A. H_2
- $B.\,H_2S$
- $\mathsf{C}.\,SO_2$
- D. O_3

Answer: A



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5. Which is not a chemical pollutant?

- A. Noise
- **B.** Pesticides
- C. Liquids
- D. Solid wastes

Answer: A



- **6.** DDT is
 - A. An antibiotic

- B. A fertilizer
- C. A non-degradable pollutant
- D. Dichlorodifluoro titanium

Answer: C



- 7. Which does not cause pollution?
 - A. Thermal power plant
 - B. Hydro-electric plant

- C. Nuclear power plant
- D. Automobiles

Answer: B



- **8.** Gaseous carbon dioxide dissolves in water droplets to produce
 - A. Sulphonic acid
 - B. Carbonic acid

- C. Sulphuric acid
- D. Carboxylic acid

Answer: B



- 9. Organo mercury compounds are
 - A. Herbicides
 - B. Fungicides
 - C. Soil conditioners

D. All of these

Answer: B



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10. HCIO is a powerful

A. Pesticide

B. Insecticide

C. Germicide

D. Herbicide

Answer: C



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11. Biosphere includes

A. Hydrosphere

B. Almosphere

C. Lithosphere

D. All of these

Answer: D

12. If BOD of a river is high it means that the river is

A. Not polluted

B. Very polluted

C. Gets least amount of light

D. Temperature of water is low

Answer: B



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13. Fluorosis, a bone disease is caused by the presence of

A. Pesticidies in water

B. Fluorides in water

C. Carbon monoxide in air

D. Photochemical

Answer: B



14. "Ozone hole" refers to:

A. Increased concentration of O_3

B. Reduction in the thickness of ozone layer in the stratosphere

C. Reduction in the thickness of ozone layer in the troposphere

D. Hole in ozone layers.

Answer: B

15. Which one is incorrect statement regarding eutrophication?

A. In eutrophication dissolved O_2 concentration decreases

B. Eutrophication occurs due to excess

$$PO_4^{3-}$$
 present in H_2O

C. Algae reduces dissovled O_2 in H_2O

D. Main cause of eutrophication is ${\rm presence\ of\ }NO_3^-$

Answer: D



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16. Which are the most dangerous radiations?

A. Gamma rays

B. Beta rays

C. Alpha rays

D. Radio waves

Answer: A



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17. Lung disease are four times more in Urban areas than Rural area. This is due to the presence of which

A. SO_2

B. CO_2

 $\mathsf{C}.\,N_2$

D. Water-vapour

Answer: A



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18. The pollutant released by jet aerosplanes in the atmosphere as fluorocarbons are called

A. Photochemical oxidants

B. Photochemical reductants

C. Aerosols

D. Physical pollutants

Answer: C



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19. Biological decay and release from ocean are important natural processes for the formation of

A. O_2

- B. CO_2
- C. *CO*
- D. SO_2

Answer: B



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20. Burning of fossil fuels is the main source of which of the following pollutants?

A. Nitric oxide

- B. Carbon monoxide
- C. Sulphur dioxide
- D. Particulate matter

Answer: C



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21. Which one is not correct regarding green house effect? a)It occurs due to high concentration of CO_2 in the atmosphere b)It is caused by gases such as CH_4, O_3 and

chlorofluorocarbons c)It would result in the warming up of the earth's surface d)It would result in lowering the level of oceans due to high evaporation of sea water

A. It is due to high concentration of CO_2 in atmosphere

B. It is influenced by green such as

 $CH_4,\,O_3$ and CFC

C. It would result in the warning up of the earth

D. It would result in lowering the level of oceans due to high evaporation.

Answer: D



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22. Which one is not a correct statement?

A. Primary pollutants are those which are emitted directly from the source

B. Acid rain is primary pollutant

C. Particulates refer to all atmospheric substances that are not gases

D. All of these

Answer: B



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23. If BOD of a river is high it means that the river is

A. Not polluted

B. Very much polluted with inorganic chemicals

C. Very much polluted with organic chemicals

D. Polluted with pesticides

Answer: C



24. Which is not a water pollutant?

- A. Automobile exaust
- B. Plant nutrietns
- C. Oxygen demanding wastes
- D. Disease causing agent.

Answer: A



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25. Phosphate pollution is caused by

A. Weathering of phosphate rocks only

- B. Phosphate rock and sewage
- C. Agricultural fertilizers only
- D. Sewage and agricultural fertilizers.

Answer: D



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26. Which of the following isnot correctly matched?

A.

Column I Column II

Photochemical smog Warm dry climate

Column II Column II

Photochemical smog Contains SO_2

Column I Column II

Classical smog Cool humid climate

Column I Column II

Classical smog Reducing smog

Answer: B



27. Which of the following is not a part of green chemistry?

- A. Photochemistry
- B. Sonochemistry
- C. Nuclear chemistry
- D. Biochemistry

Answer: C



28. Which of the following is not a herbicide?
A. Sodium chlorate
B. Sodium arsenite
C. Polyphosphate
D. Triazines
Answer: C



A. Increase oxygen content B. Kill germs C. Remove suspended particles D. Remove hardness **Answer: B Watch Video Solution**

30. Eutrophication causes reduction in

A. Nutrients

- B. Dissolved salts
- C. Dissolved oxygen
- D. All of these

Answer: C



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31. A 3 carbon containing compound A which is a constituent of photochemical smog, is made to react with HCN, product is

$$CH_2-CH_2-CHO$$
A. $|$
 CN
 $CH_3-CH-CHO$
B. $|$
 CN
 CN
 C
C. $^{(3)}$ $^{\text{CH}_2=\text{CH-CH}} \stackrel{\text{OH}}{<_{\text{CN}}}$

Answer: A



A. Reduction in soil productivity due to addition of pesticides fertilizers and industrial wastes

B. Reduction in soil productivity due to erossion and over use

C. Converting fertile land into barren land by dumping ash, garbage

D. All of these

Answer: A



33. Increased asthmatic attacks in certain seasons are related to

- A. Eating of seasonal vegetatbles
- B. Wet and dry environment
- C. Inhalation of seasonal pollen grains.
- D. Low and high temperature.

Answer: C



34. A green house effect causing gas which turns lime water milky. When is treated with carbon gives compound B. which of the following statements is not correct regarding B?

- A. It binds with haemoglobin
- B. It is also green house effect causing gas
- C. It is one of serious air polluted
- D. It is lethal gas.

Answer: B

35. When rain is accompanied by a thunderstorm, the collected rain water will have a pH value

A. Slightly higher by occurrence of thunderstorm is not there

B. Uninfluenced by occurrence of thunderstorm

C. Which depends upon the amount of dust in air

D. Slightly lower than that of rain water without thunderstorm.

Answer: D



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36. About 20km above the earth ,there is an ozone layer ,Which one of the following

statement about ozone and ozone layer is true?

A. Ozone layer is beneficial to us because ozone cuts out the ultraviolet radiation of the sun

B. The convertion of ozone to oxygen is an endothermic reaction.

C. Ozone is a triatomic linear molecular

D. Ozone layer is harmful to us because it cuts out a radiation useful for

photosynthesis.

Answer: A



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37. Select the incorrect statement

A. PAN, aldehydes, ketones, phenols, acid rain are secondary pollutants

B. In Bhopal gas tragedy the extremely toxic and deadly methyl isocyanate (MIC)

gas leaked from a storage tank.

C. By green chemistry we mean producing the chemicals of our daily needs.

D. All of these

Answer: D



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38. Clean water with BOD value and pH range when it is recommended as a drinking water respectively should be

- A. Less than 5 pm and 5.5 to 9.5
- B. More than 5ppm and 5.5 to 9.5
- C. More than 10 ppm and 3 to 4
- D. More than 15 ppm and 8 to 10

Answer: A



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Assignment Section C Linked Comprehension
Type Questions

1. Pollutants are the substances which present in the environment in greater proportion than its natural abundance and resulting in harmful or deterimental effect on the quality of environment. Generally highly toxic substances are considered. Generally highly toxic even substances that are normally considered harmless can cause pollution if they are present in underirable concentration. Over exploitation of natural resourses uncontrolled mechanisation deforestation and extensive use of chemical fertilizers and

pesticides have brought about many changes

in different component of the environment .

Acid rain is due to the increase in the concentration of in the atmospheres

- A. O_3
- B. CH_4
- C. SO_2 and NO_2
- D. O_2 and CO

Answer: C



2. Pollutants are the substances which present in the environment in greater proportion than its natural abundance and resulting in harmful or deterimental effect on the quality of environment. Generally highly toxic substances are considered. Generally highly toxic even substances that are normally considered harmless can cause pollution if they are present in underirable concentration. Over exploitation of natural resourses uncontrolled mechanisation deforestation and

extensive use of chemical fertilizers and pesticides have brought about many changes in different component of the environment .

Eutrophication causes reduction in

- A. Dissovled nitrogen
- B. Dissolved oxygen
- C. Dissolved carbon dioxide
- D. All of these

Answer: B



3. Pollutants are the substances which present in the environment in greater proportion than its natural abundance and resulting in harmful or deterimental effect on the quality of environment. Generally highly toxic substances are considered. Generally highly toxic even substances that are normally considered harmless can cause pollution if they are present in underirable concentration. Over exploitation of natural resourses uncontrolled mechanisation deforestation and

extensive use of chemical fertilizers and pesticides have brought about many changes in different component of the environment .

Which one of the air pollutant is most toxic?

- A. NO_2
- B. SO_2
- $\mathsf{C}.\,CO_2$
- D. CO

Answer: D



4. Stratosphere contains a stable layer of ozone molecules which absorbs UV radiation from the sun. The presence of ozone in atmosphere serves, as a shield to protect living organism on earth from the harmful effects of the solar ultraviolet radiation. The ultraviolet radiation are known to cause skin cancer. Ozone is formed in stratosphere by the following photochemical reactions.

$$egin{aligned} O_2(g) & \stackrel{UV}{\longrightarrow} O(g) + O(g) \ & O(g) + O_2(g) & \stackrel{UV}{\Longleftrightarrow} O_3(g) \end{aligned}$$

Ozone is thormodhynamically unstable and ecomposes to molecular oxygen. Thus a dynamic equilibrium exits between the production and decomposition of ozone molecules. Earth is protected from UV radiation by A. Carbon dioxide layer B. Nitrogen layer

Answer: C

C. Ozone layer

D. Oxygen layer

5. Stratosphere contains a stable layer of ozone molecules which absorbs UV radiation from the sun. The presence of ozone in atmosphere serves, as a shield to protect living organism on earth from the harmful effects of the solar ultraviolet radiation. The ultraviolet radiation are known to cause skin cancer. Ozone is formed in stratosphere by the following photochemical reactions.

$$O_2(g) \stackrel{UV}{\longrightarrow} O(g) + O(g)$$

 $O(g) + O_2(g) \stackrel{UV}{\Longleftrightarrow} O_3(g)$

Ozone is thormodhynamically unstable and ecomposes to molecular oxygen. Thus a dynamic equilibrium exits between the production and decomposition of ozone molecules.

The air pollutant which are responsible to deplete the ozone layer is

A. SO_2

B. CO_2

C. *CO*

D. Oxides of nitrogen and CFC's

Answer: D



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6. Stratosphere contains a stable layer of ozone molecules which absorbs UV radiation from the sun. The presence of ozone in atmosphere serves, as a shield to protect living organism on earth from the harmful effects of the solar ultraviolet radiation. The

ultraviolet radiation are known to cause skin cancer. Ozone is formed in stratosphere by the following photochemical reactions.

$$O_2(g) \stackrel{UV}{\longrightarrow} O(g) + O(g)$$

$$O(g) + O_2(g) \stackrel{UV}{\Longleftrightarrow} O_3(g)$$

Ozone is thormodhynamically unstable and ecomposes to molecular oxygen. Thus a dynamic equilibrium exits between the production and decomposition of ozone molecules.

Maximum quantity of ozone is present in

A. Stratosphene

- B. Mesosphere
- C. Troposphere
- D. Thermosphere

Answer: A



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Assignment Section D Assertion Reason Type Questions

1. Statement-1: Ozone protects earth from harmful UV radiation

Statement-2: CFC's are main source for ozone layer depletion.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,

Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: B



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2. Statement-1: Classical smog occurs in cool and humid climate.

and

Statement-2 It is also termed as oxidising smog.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

Statement-2 is NOT a correct explanation for Statement-1

B. Statement-1 is True, Statement-2 is True,

D. Statement-1 is False, Statement-2 is True

C. Statement: 1 is True, Statement - 2 is False

Answer: C



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3. Statement-1: One of the source of carbon monoxide production is automobile exhaust and

Statement-2: CO is produced as a result of incomplete combustion of fuel in automobile engines.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,

Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: A



4. Statement-1: CO is poisonous air pollutant.

Statement-2: CO binds with hoemoglobin of blood and decreases the oxygen carrying capacity of blood.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,
Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: A



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5. Statement-1: Water is polluted by organic wastes

and

Statement-2: The amount of organic wastes is measured by the BOD.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

Statement-2 is NOT a correct explanation for Statement-1

B. Statement-1 is True, Statement-2 is True,

D. Statement-1 is False, Statement-2 is True

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: B



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6. Statement-1 DDT is non-biodegradable pesticide.

and

Statement-2 DDT refer to dichloro diphenyl toluene.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,

Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: C



7. Statement-1: In present of sunlight NO_2 breaks up into nitric oxide and free oxygen atoms

Statement-2: NO_2 is the one of the source of photochemical smog.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,

Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: B



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8. Statement-1: Presence of excess of CO_2 in atmosphere can increase the temperature of earth's atmosphere

Statement-2: CO_2 is colourless and odourless gas.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,

Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: B



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9. Statement-1: Excess of CO_2 in the air can be removed by green plants .

and

Statement-2: Green plants absorbs CO_2 in photosynthesis.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,

Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: A



10. Statement-1: Deficiency of fluoride in drinking water is harmful to human being.
and

Statement-2: Fluoride concentration more than 10 ppm causes harful effect to bones and teeth.

A. Statement-1: is True, Statement-2 is True,

Statement-2 is a correct explanantion for

Statement-1

B. Statement-1 is True, Statement-2 is True,

Statement-2 is NOT a correct explanation

for Statement-1

C. Statement: 1 is True, Statement - 2 is False

D. Statement-1 is False, Statement-2 is True

Answer: B





1. Which of the following is greenhouse gas?

A. CH_4

 $\mathsf{B}.\,H_2$

 $\mathsf{C}.\,O_3$

D. All of these

Answer: 1,3



2. Which of the following is most responsible for global warming?

A. CFC

B. CH_4

 $\mathsf{C}.\,CO_2$

D. N_2O

Answer: 3



3. Which of the following gas can cause ACID rain?

A. SO_2

B. NO_2

 $\mathsf{C}.\,CO_2$

D. All of these

Answer: 4



4. The formation of photochemical smog depends upon

A. CO

B. NO

 $\mathsf{C}.\,CO_2$

D. SO_2

Answer: 2



5. The g	as resp	onsible ⁻	for the	Bhopal	tragedy
was:					

- A. Methyl isocyanide
- B. Propanenitrile
- C. Methyl isocyanate
- D. Peroxy acetyl nitrate

Answer: 3



- **6.** The pH of acid rain is
 - A. 7
 - B. Less than 5.6
 - C. Between 5.6-7.0
 - D. Between 7.0-9 0

Answer: 2



7. High concentration of Pb in human blood damages

A. Kidneys

B. Liver

C. Brain

D. All of these

Answer: 4



8. The culprit	for the ozone	layer dep	letion is
-----------------------	---------------	-----------	-----------

- A. Nitrogen oxides
- B. CFCs
- C. UV-rays
- D. Both (1)&(2)

Answer: 4



9. BOD value less than 5 ppm indicates a water sample to be

- A. Rich in dissolved oxygen
- B. Poor in dissolved oxygen
- C. Not suitable for aquatic life
- D. Highly polluted

Answer: 1



10. Which of the following is correct match?

A. Photochemical smog : SO_2

B. Nitrate in drinking water : Blue baby syndrome

C. Phosphate fertilisers in water : BOD level of water increase

D. All are correct

Answer: 4



Assignment Section A

1. The layer of atmosphere which extends upto

10km from sea level is called

A. Troposphere

B. Stratosphere

C. ionosphere

D. Mesosphere

Answer: 1



2. Those pollutants which are readily degradable by natural process are called

A. Biodegradable pollutant

B. Non-biodegradable pollutant.

C. Primary pollutant

D. Secondary pollutant

Answer: 1



3. Troposphere pollutant contains

- A. Dust
- B. Water vapours
- C. Mist
- D. All of these

Answer: 4



4. Which one of the following is a secondary pollutant?

A. CO

B. O_3

C. Pb

D. CH_4

Answer: 2



5. Which one of the following pollutants causes irritation in eye?

- A. CO_2
- $\mathsf{B.}\,SO_2$
- $\mathsf{C}.\,NO_2$
- D. All of these

Answer: 2



6. A primary pollutant is

A. CO

B. DDT

 $\mathsf{C}.\,CO_2$

D. All of these

Answer: 4



7. Which one of the following is colourless and highly toxic gas which reduces oxygen carrying capacity of blood?

- A. SO_2
- B. CO
- C. NO
- D. SO_3

Answer: 2



8. Which one of the following affects chlorophyll?

A. Sulphur dioxide

B. Nitrogen oxides

C. Carbon monoxide

D. Both (1) & (2)

Answer: 1



9. Which one of the following oxides produces brown air or reddish brown haze?

- A. Oxides of sulphur
- B. Oxides of nitrogen
- C. Oxides of carbon
- D. All of these

Answer: 2



10. Which one of the following gaseous pollutants is carcinogenic?

- A. Oxides of sulphur
- B. Oxides of nitrogen
- C. Arsenic
- D. Oxides of carbon

Answer: 3



11. Greenhouse gases cause

A. Trap UV rays

B. Increase in temperature of atmosphere

C. Prevents global warming

D. All of these

Answer: 2



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12. Greenhouse gas other than CO_2 is

- A. H_2
- B. N_2O
- $\mathsf{C}.\,O_2$
- D. SO_2

Answer: 2



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13. Photochemical smog involves

A. O_3

B. NO

 $\mathsf{C}.\,NO_2$

D. All of these

Answer: 4



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14. One of the greenhouse gas is

A. CO

B. O_2

 $\mathsf{C}.\,H_2$

D. CFC's

Answer: 4



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15. pH of acid rain is approximately

A. 5.6

B. 6.2

C. 6.7

D. 7

Answer: 1



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16. Which is not a cause of acid rain?

A. NO_2

B. CH_4

 $\mathsf{C}.\,SO_2$

D. CO_2



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17. Acid rain causes

A. Chlorosis

B. Increasing acidity of soil

C. Corroding bridges

D. All of these

Answer: 4



18. Interference in development and maturation of RBC is caused by

A. Hg pollution

B. Pb pollution

C. S pollution

D. All of these

Answer: 2



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19. Select viable pollutant

A. Smoke

B. Moulds

C. Mist

D. Fumes

Answer: 2



20. Which one of the following is not a property of classical smog?

- A. Occurs at low temperature
- B. Secondary pollutant play significant role
- C. Contains SO_2
- D. Dark brown coloured

Answer: 2



21. Photochemical smog always contains

A. SO_2

B. O_3

C. HNO_(3)`

D. All of these

Answer: 2



22. Photochemical smog is actually a cause of pollution of

- A. Soil
- B. Air
- C. Noise
- D. Water

Answer: 2



23. Photochemical smog includes the reduction of

A. SO_2

B. NO

 $\mathsf{C}.\,Cl_2$

D. NO_2

Answer: 4



24. Earth is protected from UV rays by

A. N_2

 $B.O_2$

 $\mathsf{C}.\,O_3$

D. SO_3

Answer: 3



25. Months in which ozone hole appears over poles is

- A. June-July
- B. August-September
- C. October-November
- D. December-January

Answer: 2



26. Depletion of ozone la	ayer can not cause
----------------------------------	--------------------

- A. Damage of DNA
- B. Skin cancer
- C. Cataract
- D. Rickets



27. Which one of the following gases is known as chemical weed in troposphere?

- A. C_2H_6
- B. SO_2
- $\mathsf{C}.\,O_3$
- D. NO_2

Answer: 3



28. Depletion of ozone layer causes

A. Increased transpiration

B. Damages paints and fibres

C. Causes aging of skin

D. All of these

Answer: 4



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29. Which causes water pollution?

- A. Jet planes
- B. Herbicides
- C. Smoke
- D. Combustion of fossils



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30. Most common and commerical water pollutant is

- A. Industrial waste
 - B. Fertilizers
 - C. Detergents
- D. PCB's



- 31. For clean water BOD is less then
 - A. 17 ppm

- B. 12.2 ppm
- C. 7 ppm
- D. 5 ppm



- **32.** Cause of eutrophication is
 - A. Nutrient enrichment of water bodies
 - B. Increase of oxygen in water bodies

- C. Increase in number of aquatic organisms
- D. All of these



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33. Inorganic pollutant can damage

- A. Central nervous system
- B. Liver
- C. Kidneys

D. All of these

Answer: 4



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34. Decomposition of organic matter through microbial activity is known as

- A. Eutrophication
- B. Stratification
- C. Puterscibility

D. BOD

Answer: 3



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35. Permissible level of nitrate ions in the drinking water is

- A. 40 ppm
- B. 50 ppm
- C. 60 ppm

D. 70 ppm

Answer: 2



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36. Tooth decay is caused by deficiency of

- A. Fluorides
- B. Lead
- C. Sulphates
- D. Nitrates



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37. Laxative effect is caused by

A. Nitrates

B. Sulphates

C. Lead

D. Fluoride

Answer: 2

38. Soil pollution can result in decreased

- A. Soil productivity
- B. Quality of plants
- C. Purity of ground water
- D. All of these

Answer: 4



39. Which one of the following is not an organochlorine?

- A. Parathion
- B. DDT
- C. BHC
- D. Aldrin

Answer: 1



40. Which one of the following is least persistent insecticide?

- A. Aldrin
- B. Dieldrin
- C. BHC
- D. Carbamates

Answer: 4



- **41.** Which one of the following is a herbicide?
 - A. Organochlorines
 - B. Organophosphates
 - C. Carbamates
 - D. Triazine



42. Non-biodegradable industrial waste that can be utilized by cement industry is

- A. Fly ash
- B. Slag
- C. Gypsum
- D. Both (1) & (2)

Answer: 4



43. Small quantity of industrial toxic waste is removed by

A. Burning in open bins

B. Controlled incineration

C. Burning in closed bins

D. Both (1) & (2)

Answer: 1



- 44. Select non-biodegradable industrial waste
 - A. Waste from cotton mills
 - B. Waste from paper mills
 - C. Fly ash from
 - D. Waste from food processsing units



45. Which one of the following is not a non biodegradable industrial waste?

- A. Gypsum from fertilizer industries
- B. Mud and tailings from metal industries
- C. Slag from steel industries
- D. Waste from textile industries

Answer: 4



- A. Methane gas
- B. Ethane gas
- C. Propane gas
- D. Butane gas



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47. Sewage sludge does not contain

- A. Nitrogen
- B. Phosphorus
- C. Potassium
- D. All of these



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48. Green chemistry emphasizes on

- A. Reaction that takes place in nonaqueous medium
- B. Utilization of sciences to reduce adverse impact on environment
- C. Use of condensation polymers
- D. Minimise the use of non-hazardous waste



49. In place of tetrachloroethene in drycleaning we use

- A. Sodium lauryl sulphate
- B. Sodium stearate
- C. Hydrogen peroxide
- D. Sodium bisulphite

Answer: 3



50. Chauvin, Grubbs and Schrock won 2005

Nobel prize for the development of

A. Dumas method

B. Kjeldahl's method

C. Metathesis method

D. Carius method

Answer: 3



- **1.** Which one of the following statements regarding photochemical smog is not correct?
 - A. Photochemical smog is formed through photochemical reaction involving solar energy
 - B. Photochemical smog does not cause irritation in eyes and throat
 - C. Carbon monoxide does not play any role in photochemical smog formation

D. Photochemical smog is an oxidising agent in character

Answer: 2



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2. About 20 m above the earth, there is an ozone layer. Which one of the following statement about ozone and ozone layer is true?

A. It is beneficial to us as it stops U.V. radiation

B. Conversion of ${\cal O}_3$ to ${\cal O}_2$ is an endothermic reaction

C. Ozone has a triatomic linear molecule

D. It is harmful as it stops useful radiation

Answer: 1



3. Which one of the following is responsible for depletion of the ozone layer inf the atmosphere?

A. Polyhalogens

B. Ferrocene

C. Fullerenes

D. Freons

Answer: 4



4. Which one of the following statements is not true?

A. Oxides of sulphur, nitrogen and carbon are the most widespread air pollutant

B. pH of drinking water should be between 5.5-9.5

C. Concentration of DO below 6 ppm is good for the growth of fish

D. Clean water would have a BOD value of

less than 5 ppm

Answer: 3



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5. Which of the following is not caused due to SO_2 ?

A. Cough

B. Shortness of breath

C. Spasm of larynx

D. Blindness

Answer: 4



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6. Which of the following has not adverse effect on human health?

A. NO

B. NO_2

 $\mathsf{C}.\,SO_2$

D. CO

Answer: 1



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7. Which of the following is not a greenhouse gas?

A. CO_2

B. CH_4

C. $\mathbb{C}l_2F_2$

D. O_2

Answer: 4



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8. At which of the following pH, rain is called as acid rain?

A. 4

B. 6

C. 6.8

D. All of these

Answer: 1



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9. Which of the following is Freon-11?

A. $\mathbb{C}l_3F$

B. $\mathbb{C}l_2F_2$

C. $\mathbb{C}lF_3$

D. CF_4

Answer: 1



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10. At which of the following concentration of sulphate it will have a laxative effect?

- A. Above 300 ppm
- B. Above 500 ppm
- C. Above 400 ppm

D. Above 600 ppm

Answer: 2



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11. Measurement of dissolved oxygen that would be needed by the microorganism to oxidise the compounds is known as

A. Acid rain

B. BOD

C. COD

D. Ozone layer depletion

Answer: 2



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12. Which of the following is herbicide?

A. DDT

 $\mathsf{B.}\,(CH_3)_2Hg$

 $\mathsf{C.}\,NaClO_3$

D. C_2H_2

Answer: 3



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13. Greenhouse gases

A. Allow shorter wavelength to enter earth's atmosphere while doesn't allow longer wavelength to leave the earth's atmosphere

- B. Allow longer wavelength to enter earth atmosphere while doesn't allow shorter. wavelength to leave the surface
- C. Don't have wavelength specific character
- D. Near to earth show wavelength specific behaviour while far from earth have wavelength independent behaviour



14. Which of the following is the correct match?

A. Classical smog - NO_2

B. Photochemical smog - SO_2

C. Greenhouse gas - CH_4

D. Both (1) & (3)

Answer: 3



15. Which group correctly represent the photochemical smog produced during reaction of hydrocarbon in the combustion chamber of an engine?

- A. Formaldehyde and PAN
- B. Acrolein and PAN
- C. Formaldehyde and acrolein
- D. Formaldehyde, acrolein and PAN

Answer: 4



16. Freons which cause damage to ozone layer are

A. Chemically unreactive

B. Non-toxic

C. Odourless

D. All of these

Answer: 4



17. Ozone depletion over Antarctica is maximum in the month of

A. September and October

B. March and April

C. June and July

D. December and january

Answer: 1



18. Heat pollution affects mainly
A. Vegetation
B. Aquatic creature
C. Rocks
D. Air
Answer: 2
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19. Bhopal gas tragedy was caused by

A. CH_2CN

B. CH_3NC

 $\mathsf{C.}\,CH_3N=C=O$

 $\operatorname{D.} CH_3 - N = O$

Answer: 3



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20. What is the name of chlorine containing antibiotic?

- A. Chloretone
- B. Chloroform
- C. Chloromycetin
- D. Carbontetrachloride



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21. How much percentage of air by mass is present in troposphere?

- A. 40
- B. 8
- C. 80
- D. 100



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Assignment Section C

- **1.** Which of the following is a sink for CO?
 - A. Haemoglobin
 - B. Micro-organism present in the soil
 - C. Oceans
 - D. Plants



2. Which one of the following is not a commor
component of photochemical smog

- A. Ozone
- B. Acrolein
- C. Peroxyacetyl nitrate
- D. Chlorofluorocarbons



- **3.** Which one of the following statements regarding photochemical smog is not correct?
- A. Photochemical smog is formed through photochemical reaction involving solar energy
 - B. Photochemical smog does not cause irritation in eyes and throat
 - C. Carbon monoxide does not play any role in photochemical smog formation

D. Photochemical smog is an oxidising agent in character

Answer: 2



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4. Which one of the following statement is not true?

A. Oxides of sulphur, nitrogen and carbon are the most widespread air pollutant

B. pH of drinking water should be between 5.5 - 9.5

C. Concentration of DO below 6 ppm is good for the growth of fish

D. Clean water would have a BOD value of less than 5 ppm

Answer: 3



- **5.** Green chemistry means such reactions which
 - A. Study the reactions in plants
 - B. Produce colour during reactions
 - C. Reduce the use and production of hazardous chemicals
 - D. Are related to the depletion of ozone layer



6. Which of the following is a secondary pollutant?

A. CO_2

B. N_2O

 $\mathsf{C}.\,SO_2$

D. PAN

Answer: 4



7. Lung cancer is caused by:

- A. Asbestos
- B. Silica
- C. Textiles
- D. Paper

Answer: 3



- **8.** BOD_5 is
 - A. Waste decomposed in 5 days
 - B. Oxygen used in 5 days
 - C. Microorganisms killed in 5 days
 - D. Dissolved oxygen left after 5 days



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9. Ozone in the stratosphere is deleted by

A. CF_2Cl_2

B. C_7F_{16}

C. $C_6H_6Cl_2$

D. C_6F_6

Answer: 1



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10. Which one of the following is responsible for depletion of the ozone layer in the upper strata of the atmosphere?

- A. Polyhalogens
- B. Ferrocene
- C. Fullerenes
- D. Freons



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11. The smog is essentially caused by the presence of

- A. ${\cal O}_2$ and ${\cal O}_3$
- B. O_2 and N_2
- C. Oxides of sulphur and nitrogen
- D. O_3 and N_2



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12. Pick up the correct statement :

- A. CO which is a major pollutant resulting from the combustion of fuels in automobiles plays a major role in photochemical smog
- B. Classical smog has an oxidizing character while the photochemical smog is reducing in character
- C. Photochemical smog occurs in day time whereas the classical smog occurs in the moming hours

D. During formation of smog the level of ozone in the atmosphere goes down

Answer: 3



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13. In Antartica, ozone depletion is due to the formation of the following compound

A. Acrolein

B. Peroxy acetyl

 $\mathsf{C}.\,SO_2$ and SO_3

D. Chlorine nitrate

Answer: 4



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14. Which of the following is not a greenhouse gas?

A. CO_2

B. CH_4

 $\mathsf{C}.\,O_3$

D. N_2

Answer: 4



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15. High concentration of fluoride is poisonous and harmful to bones and teeth at levels over

A. 1 ppm

B. 3 ppm

C. 5 ppm

D. 10 ppm

Answer: 4



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16. Nitrogen dioxide and sulphur dioxide have some properties in common, which property is shown by one of these compounds, but not by the other?

- A. is used as a food-preservative
- B. Forms 'acid-rain'
- C. is a reducing agent
- D. Is soluble in water

Answer: 1



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Assignment Section D Assertion Reason Type Questions

1. A: Global warming is due to Green House Effect.

R: Only Green House gas is CH_4

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but

Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4).

Answer: 2



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2. A: Ozone depletion potential is maximum in

CFC's.

R: CFC looses active chlorine.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).
- B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)
- C. If Assertion is true statement but

 Reason is false, then mark (3)
- D. If both Assertion and Reason are false statements, then mark (4).

Answer: 2



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3. A: Photochemical smog is also known as oxidising smog.

R: Photochemical smog is chiefly composed of ${\cal O}_3$ PAN, etc.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4).

Answer: 1



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4. A: Value of COD is greater than BOD.

R: Used oxygen is demanded by some chemicals for oxidation of inorganic and organic pollutants.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).
- B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but

Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4).

Answer: 1



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5. A: Productivity of eutrophic lake is maximum.

R: Eutrophication is mainly due to addition of $SO_{4^{2-}}$ and heavy metals.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but

Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4).

Answer: 3



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