

India's Number 1 Education App

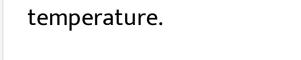
CHEMISTRY

FOR IIT JEE ASPIRANTS OF CLASS 12 FOR CHEMISTRY

ENVIRONMENTAL CHEMISTRY

Illustration

1. Name the different rexampletions of the atmosphere along with their altitudes and

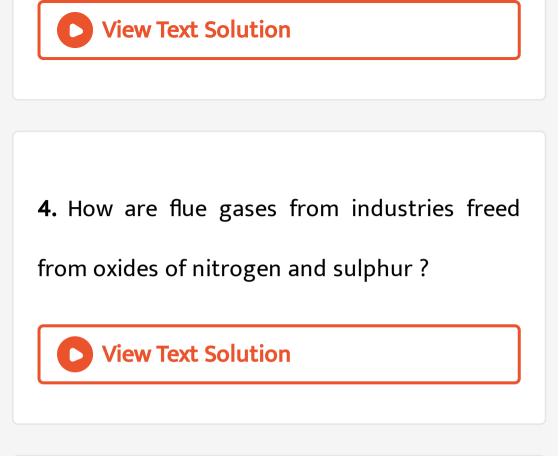




2. What do you mean by 'Inversion temperature' in different rexampleions of the atmosphere ?

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3. How are NO and NO_2 formed in the atmosphere ?



5. What is not correct about green house effect?

A. It results in global warming.

B. CO_2 is one of the main chemical species

responsible for it.

C. It results in lowering of levels of ocean

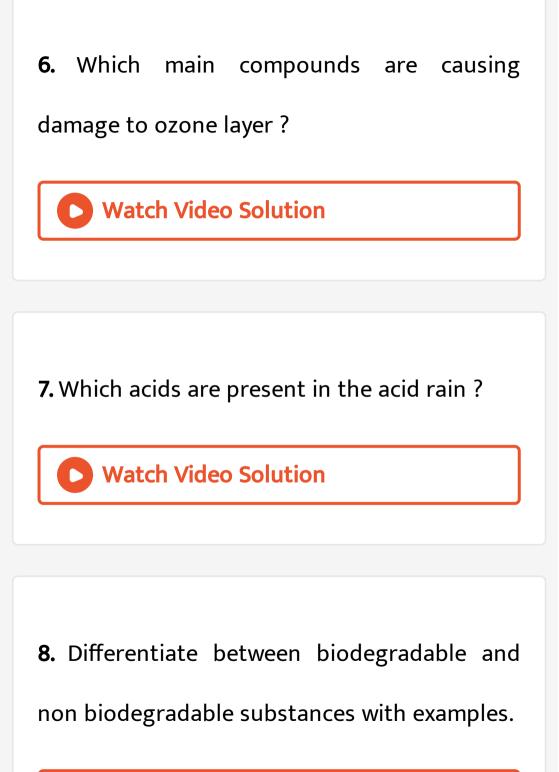
over the years.

D. CH_4, O_3, CFC also contribute to green

house effect

Answer:

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9. What are the main sources of thermal pollution ?

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10. Name some factors which cause soil pollution.

11. Name the different rexampletions of the atmosphere along with their altitudes and temperature.



12. What do you mean by 'Inversion temperature' in different rexampleions of the atmosphere ?

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13. How are NO and NO_2 formed in the

atmosphere?



14. How are flue gases from industries freed

from oxides of nitrogen and sulphur ?

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15. What is not correct about green house effect ?

A. It results in global warming.

B. CO_2 is one of the main chemical species

responsible for it.

C. It results in lowering of levels of ocean

over the years.

D. CH_4, O_3, CFC also contribute to green

house effect

Answer:

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16. Which main compounds are causing damage to ozone layer ?

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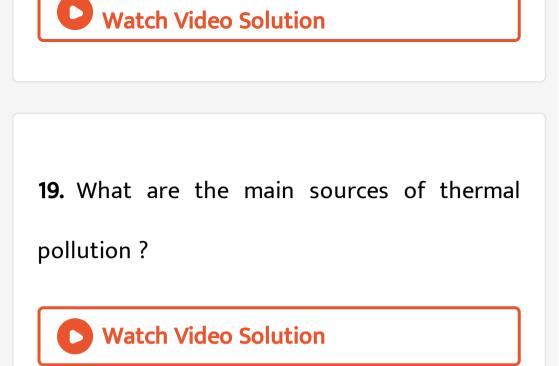
17. Which acids are present in the acid rain ?

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18. Differentiate between biodegradable and

non biodegradable substances with examples.





20. Name some factors which cause soil pollution.

O Watch Video Solution

1. Why does rain water have a pH of about 5-6

?

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2. When does a rain is considered to be acid

rain?

3. Explain giving reasons. 'The presence of CO reduces the amount of haemoglobin available in the blood for carrying oxygen to the body cells'.



4. Why is acid rain considered as a threat to

'Taj Mahal' ?

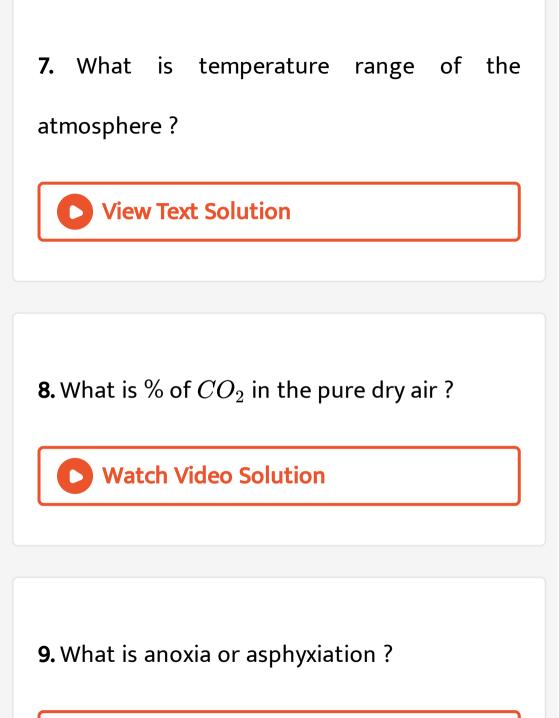
5. Fish do not grow in warm water as in cold

water, why?

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6. Oxygen plays a key role in the troposphere

while ozone in the stratosphere . Explain.



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10. How are NO and NO_2 formed in the atmosphere.



11. What is chlorosis ?



12. What are reactions involved in removing SO_2 from the atmosphere by passing it through a solution containing citrate ions ?



13. What is the size of particulate ?



14. What type of aromatic compounds are

present as particulate in the air ?



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Watch Video Solution

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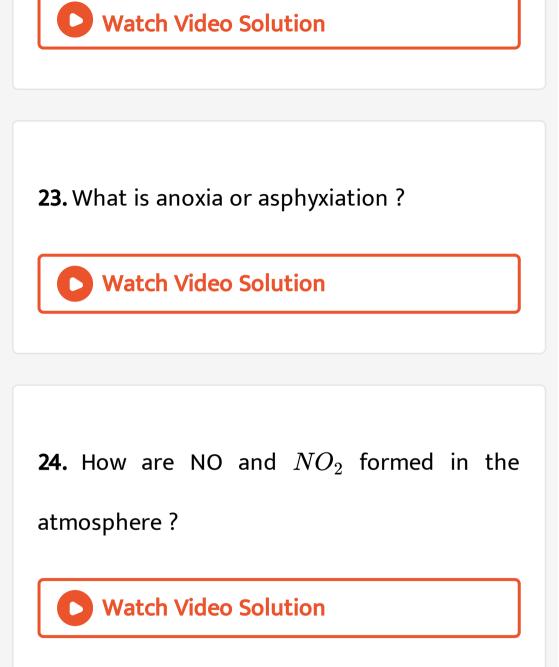


19. Fish do not grow in warm water as in cold water, why ?

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20. Oxygen plays a key role in troposphere while ozone in the stratosphere. Elaborate. Watch Video Solution **21.** What is temperature range of the atmosphere? Watch Video Solution

22. What is % of CO_2 in the pure dry air ?



25. What is chlorosis ?



26. What are reactions involved in removing SO_2 from the atmosphere by passing it through a solution containing citrate ions ?



27. What is the size of particulate ?



28. What type of aromatic compounds are

present as particulate in the air ?

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Solved Problems Objective

1. Which one of the following is a source of energy but does not cause pollution ?

A. Gasoline

B. Nuclear power plants

C. Fossil fuels

D. Sun

Answer: D

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2. The acid rain does not contian

A. Sulphuric acid

- B. Nitric acid
- C. Sulphurous acid
- D. Acetic acid

Answer: D

- 3. Depletion of ozone layer causes
 - A. Blood cancer
 - B. Lung cancer

C. Skin cancer

D. Breast cancer

Answer: C



4. Which of the following is not green house

gas?

A. CO_2

B. CH_4

C. Chloro fluoro carbons

 $\mathsf{D}.\,O_2$

Answer: D



5. Ozone layer is present in

A. Troposphere

B. Stratosphere

C. Mesosphere

D. Exosphere

Answer: B

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6. White lung cancer' is caused by

A. Asbestos

B. Silica

C. textiles

D. Paper





7. BOD 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

Answer: B



8. The aromatic compounds is present as

particulates are

A. Benzene

B. Toluene

C. Nitrobenzene

D. Polycyclic hydrocarbon

Answer: D







9. Which of the following is present in maximum amount in acid rain ?

A. HNO_3

 $\mathsf{B.}\,H_2SO_4$

C. HCl

D. H_2CO_3

Answer: B



10. London smog is found in

A. Summer during day time

B. Summer during morning time

C. Winter during morning time

D. Summer during day time

Answer: C

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11. Which of the following is not involved in

the formation of photochemical smog ?

A. NO

- $\mathsf{B.}\,O_3$
- $\mathsf{C.}\, C_x H_y$
- D. SO_2

Answer: D



12. Which of the following has greatest affinity

for haemoglobin ?

A. CO

B. NO

 $\mathsf{C}.O_2$

D. CO_2

Answer: B

13. Which of the following is a secondary

pollutant?

A. NO

B. CO

 $\mathsf{C}.SO_2$

D. PAN

Answer: B

14. Which of the following is not considered to

be a pollutant ?

A. NO_2

 $\mathsf{B.}\,CO_2$

 $\mathsf{C}.O_3$

D. $C_x H_y$

Answer: B

15. The most abundant hydrocarbon pollutant

is :

A. Methane

B. Ethane

C. Propane

D. Butane

Answer: A

16. Which of the following is true about photochemical smog ?

A. It is reducing in nature

B. It is formed in water

C. It is a mixture of smoke and fog

D. It causes irritation in eyes.

Answer: D

17. Which of the following is the coldest

rexampleion?

A. Troposphere

B. Mesosphere

C. Stratosphere

D. thermosphere

Answer: B

18. What is most harmful for life on globe?

A. Deforestation

B. Soil erosion

C. Increasing desert

D. Nuclear fail out

Answer: D

19. If BOD of river is high, this implies that the river is

A. Non polluted at all

B. Highly polluted with inorganic chemicals

C. Highly polluted with organic chemicals

which are decomposed by

microorganims

D. Polluted with pesticides







20. Fluorosis, the base disease is caused by the

presence of

- A. Pesticides in water
- B. Fluorosis in water
- C. CO in air
- D. SO_2 in air

Answer: B

21. Which one of the following is a source of energy but does not cause pollution ?

A. Gasoline

B. Nuclear power plants

C. Fossil fuels

D. Sun

Answer: D

22. The acid rain does not contian

A. Sulphuric acid

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C. Sulphurous acid

D. Acetic acid

Answer: D

23. Depletion of ozone layer causes

A. Blood cancer

B. Lung cancer

C. Skin cancer

D. Breast cancer

Answer: C

24. Which of the following is not green house

gas?

A. CO_2

 $\mathsf{B.}\,CH_4$

C. Chloro fluoro carbons

 $\mathsf{D}.\,O_2$

Answer: D

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A. Troposphere

- B. Stratosphere
- C. Mesosphere
- D. Exosphere

Answer: B



26. White lung cancer' is caused by

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B. Silica

C. textiles

D. Paper

Answer: C

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27. BOD 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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28. The aromatic compounds is present as particulates are

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B. Toluene

C. Nitrobenzene

D. Polycyclic hydrocarbon

Answer: D

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A. HNO_3

$\mathsf{B}.\,H_2SO_4$

C. HCl

D. H_2CO_3

Answer: B

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30. London smog is found in

A. Summer during day time

B. Summer during morning time

C. Winter during morning time

D. Summer during day time

Answer: C

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31. Which of the following is not involved in

the formation of photochemical smog ?

A. NO

 $\mathsf{B}.\,O_3$

$\mathsf{C.}\, C_x H_y$

D. SO_2

Answer: D



32. Which of the following has greatest affinity

for haemoglobin ?

A. CO

B. NO

 $\mathsf{C}.\,O_2$

D. CO_2

Answer: B



33. Which of the following is a secondary

pollutant ?

A. NO

B. CO

 $\mathsf{C}.SO_2$

D. PAN

Answer: B



34. Which of the following is not considered to

be a pollutant ?

A. NO_2

 $\mathsf{B.}\,CO_2$

 $\mathsf{C}.O_3$

D. $C_x H_y$

Answer: B



35. The most abundant hydrocarbon pollutant

is :

A. Methane

B. Ethane

C. Propane

D. Butane

Answer: A



36. Which of the following is true about photochemical smog ?

A. It is reducing in nature

B. It is formed in water

C. It is a mixture of smoke and fog

D. It causes irritation in eyes.

Answer: D



37. Which of the following is the coldest layer?

A. Troposphere

B. Mesosphere

C. Stratosphere

D. thermosphere

Answer: B

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38. What is most harmful for life on globe ?

A. Deforestation

B. Soil erosion

C. Increasing desert

D. Nuclear fail out





39. If BOD of river is high, this implies that the river is

A. Non polluted at all

B. Highly polluted with inorganic chemicals

C. Highly polluted with organic chemicals

which are decomposed by

microorganims

D. Polluted with pesticides

Answer: C

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40. Fluorosis, the base disease is caused by

the presence of

A. Pesticides in water

B. Fluoride in water

C. CO in air

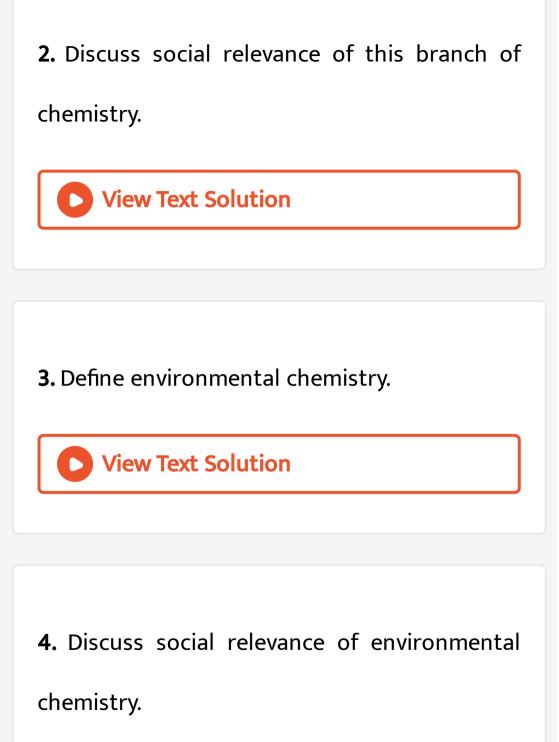
D. SO_2 in air

Answer: B

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1. Define environmental chemistry.



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Exercise 2

1. In what rexampleions of the atmosphere, the

temperature increasing with altitudes and in

which rexampleions it decreases.

2. In what rexampleions of the atmosphere, the temperature increasing with altitudes and in which rexampleions it decreases.

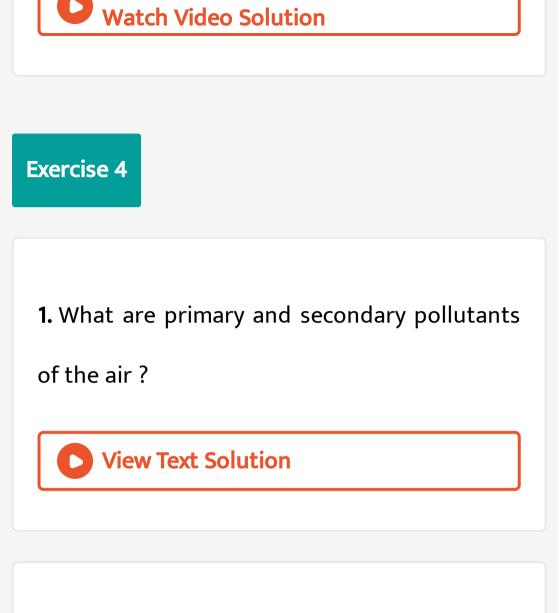


Exercise 3

1. Is CO_2 a pollutant in true sense ?

2. Name the oxides of nitrogen causing pollution. **View Text Solution 3.** Is CO_2 a pollutant in true sense ? Watch Video Solution 4. Name the oxides of nitrogen causing pollution.





2. What are primary and secondary pollutants

of the air ?





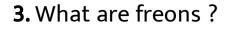


1. What are freons?

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2. Name the chemicals responsible for acid

rain?





4. Name the chemicals responsible for acid

rain?

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Exercise 6

1. What is the role of CO_2 in the 'green house

effect' ?

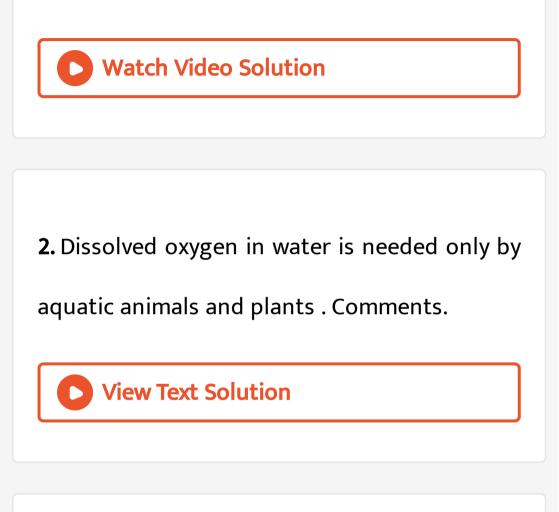
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2. What is the role of CO_2 in the 'green house

effect' ?



1. What dos BOD and COD stands for ?



3. What dos BOD and COD stands for ?

4. Dissolved oxygen in water is needed only by

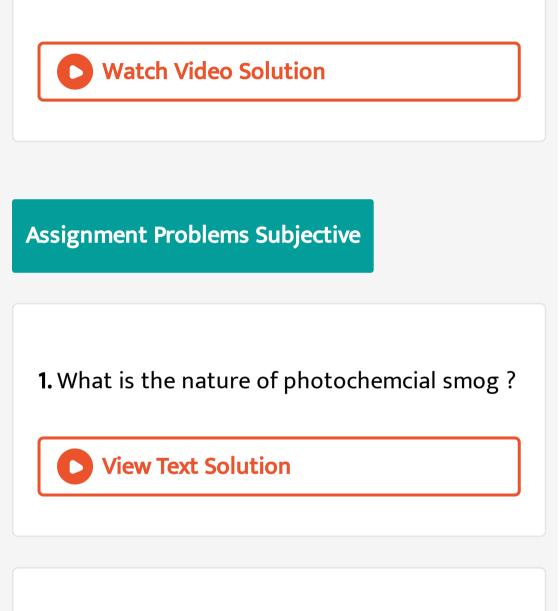
aquatic animals and plants . Comments.





1. Write name of soil pollutants.

2. Write name of soil pollutants.



2. Which acids are present in the acid rain ?



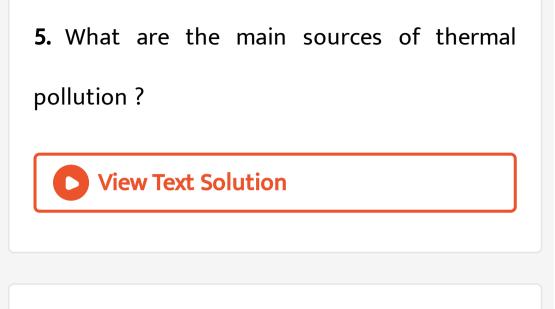


3. What is the role of CO_2 in the green house

effect ?

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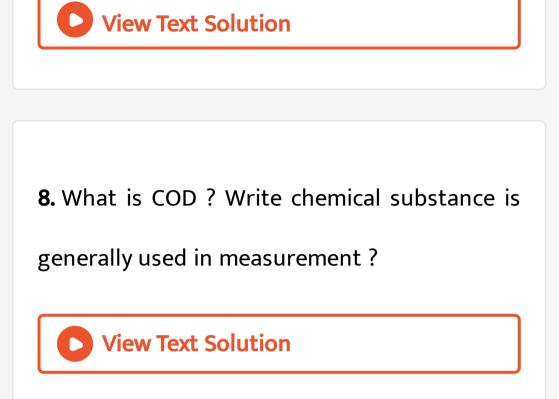
4. What is siltation ?



6. What is the role of builder in synthetic detergents ?



7. What is BOD ?



9. Why there is ozone depletion mainly ones

an Antartica ?

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10. In which season the depletion of ozone on Antartica takes place and when it is replenished .

O View Text Solution

11. Give three examples in which green chemistry has been applied ?

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12. What is Acid rain ? What are its harmful effects ?View Text Solution

13. What is Green house effect ? How does it

affect the global climate ?

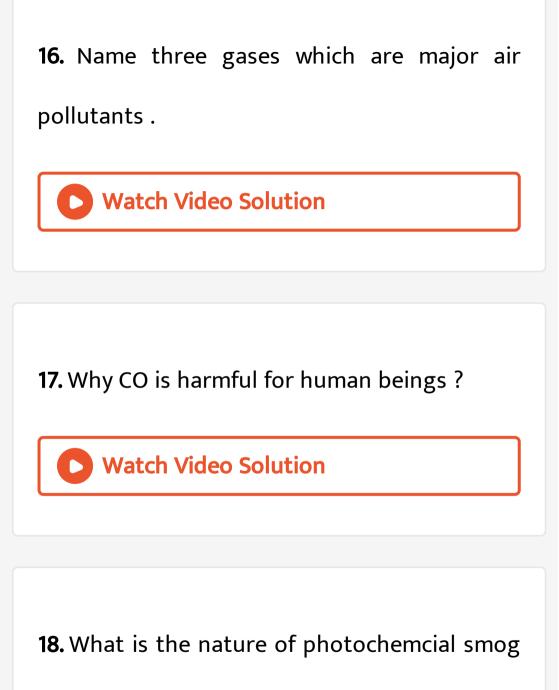


14. What are different sources of soil pollution ? Name the pollutants being added by them ?

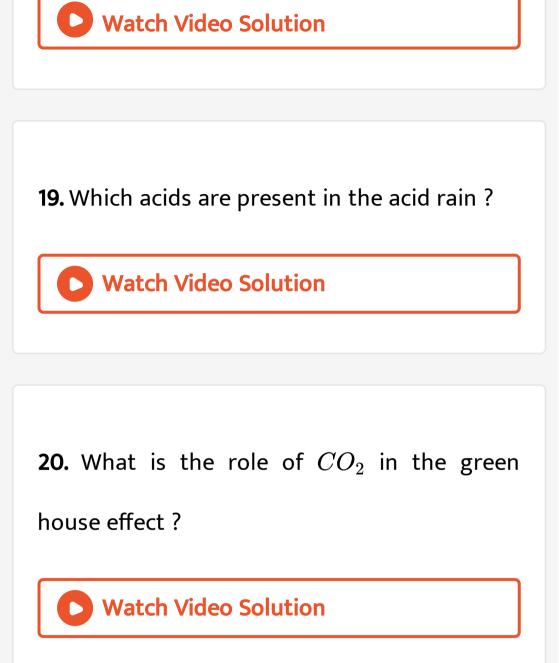


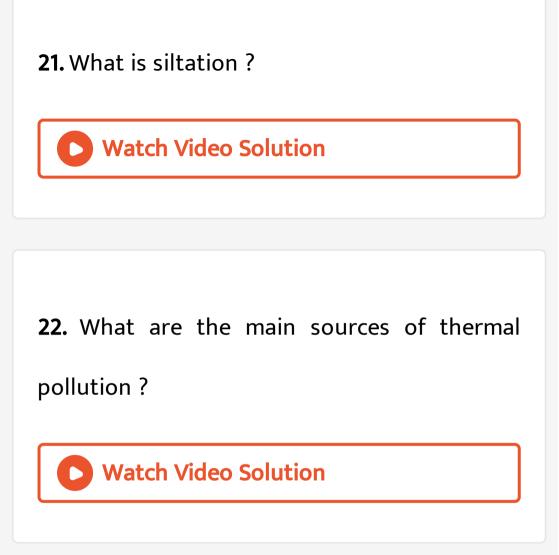
15. Why is COD preferred over BOD ?



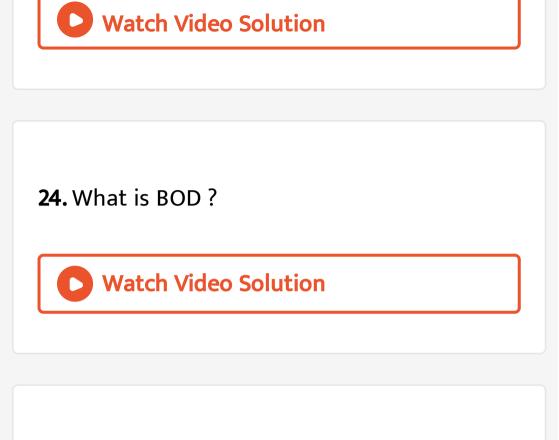


?





23. What is the role of builder in synthetic detergents ?



25. What is COD ? Write chemical substance is

generally used in measurement ?

26. Why there is ozone depletion mainly ones

an Antartica ?

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27. In which season the depletion of ozone on Antartica takes place and when it is replenished .

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Watch Video Solution

31. What are different sources of soil -pollution

? Name the pollutants being added by them ?

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32. Why is COD preferred over BOD ?



33. Name three gases which are major air pollutants .

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34. Why CO is harmful for human beings ?

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Assignment Problems Objective Level I

1. Which of the following is the uppermost rexampleion of the atmosphere ?

A. Stratosphere

B. Troposphere

C. Exosphere

D. Ionosphere

Answer: C

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2. The size of particulates of H_2SO_4 fog lies in

the range.

A. 5-100 nm

B. 100-500 nm

C. 500-1000 nm

D. 1000-10,000 nm

Answer: C

3. Photochemical smog is formed in

A. Summer during morning time

B. summer during day time

C. Winter during morning time

D. winter during day time

Answer: B



4. Which of the following statement is false ?

A. London smog is oxidising in nature

B. London somg contains H_2SO_4

C. London somg is formed in winter

D. London smog causes bronchitis

Answer: A

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5. Which of the following is not a greenhouse

gas?

A. CO_2

B. CH_4

C. Chloro fluoro carbons

 $\mathsf{D}.\,O_2$

Answer: D

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6. In which rexampleion /rexampleions of the atmosphere , temperature decreases with altitudes ?

- A. Troposphere
- B. Stratosphere
- C. thermosphere
- D. none of these

Answer: A



7. The gas/es involved in the formation of photochemical fog are

A. CO_2

$\mathsf{B.}\,SO_2$

C. NO

D. none of these

Answer: C

View Text Solution

8. Choose the wrong statement/s

effect

B. CO_2 can absorb radiation but does not

allow them to pass through

C. NO is less harmful than NO_2

D. Acid rain contains mainly HNO_3

Answer: D

9. Ozone in the stratosphere is deleted by

A. CF_2Cl

B. $C_7 H_{16}$

 $\mathsf{C.}\, C_6 H_6 C l_6$

 $\mathsf{D.}\, C_6 H_6$

Answer: A

10. The smog is essentially caused by the presence of

A. O_2 and O_3

B. O_2 and N_2

C. Oxides of sulphur and nitrogen

D. O_3 and N_2

Answer: C

11. Which one of the following is resposible of

depletion of ozone layer in the upper strate of

the atmosphere ?

A. polyhalogens

B. Ferrocene

C. Fullerences

D. Freons

Answer: D

12. Pollutants of automobile exhausts that affects nervous system/produces mental diseases in

A. Mercury

B. Lead

C. Nitrogen dioxide

D. Sulphur dioxide

Answer: B

13. Carbon monoxide is pollutant as it

A. Inactivates nerves

B. Inhibits glycolysis

C. Combines with oxygen

D. Combines with haemoglobin

Answer: D

14. Most abundant water pollutant is

A. Detergents

B. Pesticides

C. Industrial wastes

D. Ammonia

Answer: C

15. Most hazardous metal pollutant of

automobile exhaust is

A. Mercury

B. Cadmium

C. Lead

D. Copper

Answer: C

16. Which of the following is the uppermost

rexampleion of the atmosphere ?

A. Stratosphere

B. Troposphere

C. Exosphere

D. Ionosphere

Answer: C

17. The size of particulates of H_2SO_4 fog lies

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A. 5-100 nm

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C. 500-1000 nm

D. 1000-10,000 nm

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D. winter during day time

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Watch Video Solution

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20. Which of the following is not a greenhouse

gas?

A. CO_2

B. CH_4

C. Chloro fluoro carbons

 $\mathsf{D}.\,O_2$

Answer: D



21. In which region of the atmosphere , temperature decreases with altitudes ?

A. Troposphere

- B. Stratosphere
- C. thermosphere
- D. none of these

Answer: A



22. The gas/es involved in the formation of

photochemical fog are

A. CO_2

$\mathsf{B.}\,SO_2$

C. NO

D. none of these

Answer: C

Watch Video Solution

23. Choose the wrong statement/s

effect

B. CO_2 can absorb radiation but does not

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Answer: A



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B. O_2 and N_2

C. Oxidise of sulphur and nitrogen

D. O_3 and N_2

Answer: C

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Answer: C

30. Most hazardous metal pollutant of

automobile exhausts is :

A. Mercury

B. Cadmium

C. Lead

D. Copper

Answer: C

- 1. Which of the following act as secondary
- pollutants ?
 - A. CO_2
 - $\mathsf{B.}\,SO_3$
 - $\mathsf{C}.NO_2$
 - D. O_3

Answer: B::C::D





3. Which of the following increases the amount of CO_2 in atmosphere ?

A. Photosynthesis

B. decay of animals

C. Breathing

D. Burning of coal

Answer: B::C::D



4. Acid rain is due to

A. formation of oxides of sulphur

B. formation of oxides of nitrogen

C. HCl

D. $HClO_4$

Answer: A::B

Watch Video Solution

5. Which of the followin acts as a pollutant ?

A. CO

 $\mathsf{B.}\,SO_2$

$\mathsf{C}.CO_2$

$\mathsf{D}.\,O_2$

Answer: A::B

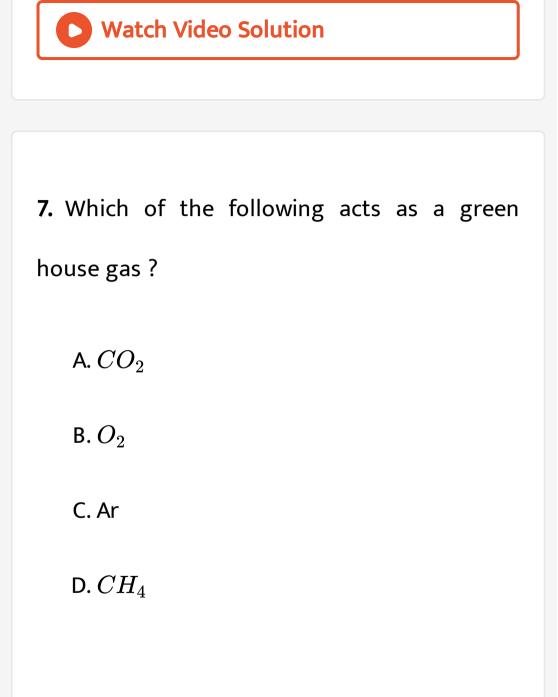


6. Ozone is not present in

A. thermosphere

- B. Mesosphere
- C. Stratosphere
- D. O_3 layer

Answer: A::B



Answer: A::D





8. Which oxide of nitrogen act as a pollutant ?

A. N_2O_5

B. NO

 $\mathsf{C}.\,NO_2$

D. N_2O

Answer: B::C::D

9. Marble acts as a sink for

A. H_2SO_4

B. HCl

 $\mathsf{C}.\,HNO_3$

D. O_3

Answer: B::C::D



10. Which of the following is a source of energy but does not cause pollution ?

A. Sun

B. water

C. gasoline

D. fossil fuel

Answer: A::B

11. Which of the following act as secondary

pollutants?

A. CO_2

- $\mathsf{B.}\,SO_3$
- $\mathsf{C}.NO_2$
- $\mathsf{D}.\,O_3$

Answer: B::C::D



12. What are atmospheric pollutants ?



13. Which of the following increases the amount of CO_2 in atmosphere ?

A. Photosynthesis

B. decay of animals

C. Breathing

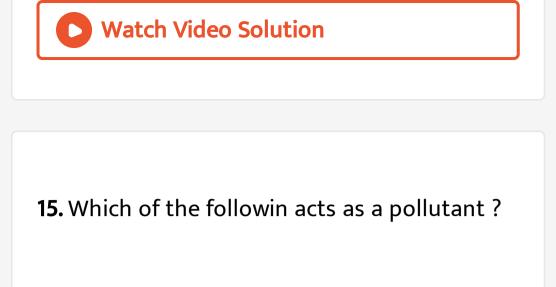
D. Burning of coal

Answer: B::C::D



- 14. Acid rain is due to
 - A. formation of oxides of sulphur
 - B. formation of oxides of nitrogen
 - C. HCl
 - D. $HClO_4$

Answer: A::B



- A. CO
- B. SO_2
- $\mathsf{C}.\,CO_2$
- $\mathsf{D}.\,O_2$

Answer: A::B



16. Ozone is not present in

A. thermosphere

B. Mesosphere

C. Stratosphere

D. O_3 layer

Answer: A::B

17. Which of the following acts as a green house gas ?

A. CO_2

 $\mathsf{B.}\,O_2$

C. Ar

D. CH_4

Answer: A::D

18. Which oxide of nitrogen act as a pollutant?

A. N_2O_5

B. NO

 $\mathsf{C}.NO_2$

D. N_2O

Answer: B::C::D



19. Marble does not act as a sink for

A. H_2SO_4

B. HCl

$\mathsf{C}.HNO_3$

D. O_3

Answer: B::C::D



20. Which of the following is a source of energy but does not cause pollution ?

A. Gasoline

B. Nuclear Power Plants

C. Fossil Fuels

D. Sun

Answer: A::B

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Assignment Problems Objective Level Ii Assertion

Reason Type Question

 Assertion: Photochemical smog is a combination of photons with smoke and fog.
 Reason: Photochemical smog is formed in the stratosphere.

A. If both 'A' and 'R' are correct and 'R' is

correct reason for 'A'.

B. If both 'A' and 'R' are correct and 'R' is

not correct reason for 'A'.

C. If 'A' is true and 'R' is false.

D. If both 'A' and 'R' are false.

Answer: D



2. Assertion: CO & NO both combine with haemoglobin.

Reason: Both have equal affinity for haemoglobin.

A. If both 'A' and 'R' are correct and 'R' is correct reason for 'A'.

B. If both 'A' and 'R' are correct and 'R' is

not correct reason for 'A'.

C. If 'A' is true and 'R' is false.

D. If both 'A' and 'R' are false.

Answer: C

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3. Assertion: Photochemical smog is a combination of photons with smoke and fog.

Reason: Photochemical smog is formed in the

stratosphere.

A. If both 'A' and 'R' are correct and 'R' is

correct reason for 'A'.

B. If both 'A' and 'R' are correct and 'R' is

not correct reason for 'A'.

C. If 'A' is true and 'R' is false.

D. If both 'A' and 'R' are false.

Answer: D

4. Assertion: CO & NO both combine with haemoglobin.

Reason: Both have equal affinity for haemoglobin.

A. If both 'A' and 'R' are correct and 'R' is

correct reason for 'A'.

B. If both 'A' and 'R' are correct and 'R' is

not correct reason for 'A'.

C. If 'A' is true and 'R' is false.

D. If both 'A' and 'R' are false.

Answer: C





1. In which of the following layers of atmosphere is ozone layer present

A. Stratosphere

B. lithosphere

C. troposhere

D. Exosphere

Answer: A

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2. Ozone in the stratosphere is deleted by

A. CF_2Cl_2

B. $C_7 H_{16}$

$\mathsf{C.}\, C_6H_6Cl_6$

D. C_6H_6

Answer: A



3. In which of the following layers of atmosphere is ozone layer present

A. Stratosphere

B. lithosphere

C. troposhere

D. Exosphere

Answer: A



4. Ozone in stratosphere is depleted by:

A. CF_2Cl_2

B. $C_7 H_{16}$

 $\mathsf{C.}\, C_6 H_6 C l_6$

$\mathsf{D.}\, C_6 H_6$

Answer: A

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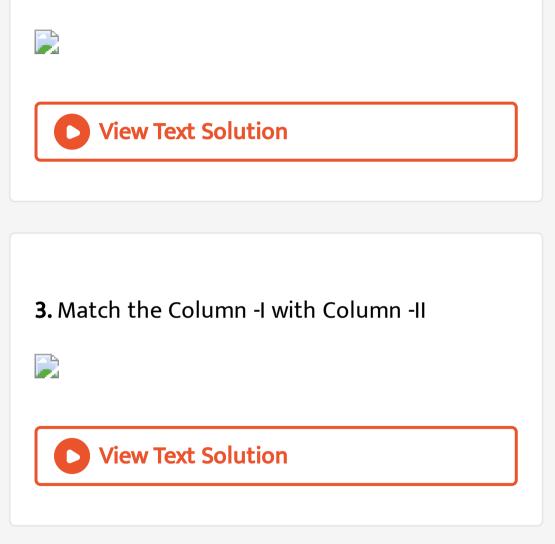
Matrix Type Questions

1. Match the Column -I with Column -II



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2. Match the Column -I with Column -II



4. Match the Column -I with Column -II



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