



CHEMISTRY

BOOKS - NAGEEN CHEMISTRY (ENGLISH)

ENVIRONMENTAL CHEMISTRY

Review Exercise

1. What do you understand by environment?



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2. What is biosphere?



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3. What do you understand by pollution and environmental pollutants ?



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4. What are non-degradable pollutants? Give some examples.



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5. What are chemical pollutants ? Give some examples.



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6. Define air pollution. What are the main pollutants ?



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7. How are the air pollutants classified ?
Explain with examples.



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8. What do you understand by particulates ?

Give some examples.



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9. Name various sources of air pollution.



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10. How do plants help in reducing air pollution?



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11. Why is the presence of carbon monoxide in the atmosphere undesirable ?



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12. Which oxides of nitrogen cause air pollution and how?



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13. Give an example of secondary pollutant.



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14. What are photochemical oxidants ? Give two examples.



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15. Give a brief account of the remedial measures which help in reducing air pollution.





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16. Name the important segments of the atmosphere and mention their important characteristics.



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17. What is ionosphere and what type of species are present in it?



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18. What is the main difference between London smog and Los Angeles smog ?



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19. What are the harmful effects of photochemical smog and how can they be controlled?



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20. What is acid rain and how is it formed ?



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21. What are the effects of acid rain on plants and animals?



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22. How is ozone formed in the upper atmosphere? State its importance. What is

responsible for its depletion ? Write one harmful effect of ozone depletion.



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23. The depletion of the ozone layer causes



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24. What is ozone hole and when was it first discovered?



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25. What do you understand by stone leprosy?



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26. Name some important greenhouse gases.



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27. Define Water pollution



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28. Name some common water pollutants.



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29. What are pathogenic microorganisms and how do they enter into water bodies?



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30. Why is secondary waste water treatment referred to as biological approach ?



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31. What do you understand by soil pollution?



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32. What are the devices used by industries to control air pollution?



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33. What do you understand by Green House effect?



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34. What are green chemicals?



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35. What do you mean by green chemistry?

How will it help decrease environmental pollution?



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Very Short Answer Type Question

1. Which part of the environment do different types of rocks constitute?



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2. How does the energy requirement of biosphere get fulfilled ?



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3. Define pollution.



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4. Name a few physical pollutants.





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5. Is DDT a biodegradable pollutant ?



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6. Sort out non-biodegradable and biodegradable pollutants among the following : Mercury salts, sewage, plant leaves, BHC, cadmium salts.



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7. In what way is CO harmful to human beings?



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8. Name the gas which is largely responsible for green house effect.



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9. In which part of atmosphere is ozone layer found?



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10. Name a pollution which is carcinogenic in nature



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11. Is PAN a photochemical oxidant ?



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12. What is the size of particulates?



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13. Do hydroelectric and solar power systems cause pollution ?



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14. What type of species are usually present in the atmosphere ?



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15. What is smog? How is classical smog different from photochemical smogs?



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16. Calculate the wavelength in Angstroms of the photon that is emitted when an electron in the Bohr's orbit, $n = 2$ returns to the orbit, $n = 1$ in the hydrogen atom. The ionisation

potential of the ground state hydrogen atom is 2.17×10^{-11} erg per atom.



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17. Name three gases which cause acid rain.



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18. How is ozone formed in the upper atmosphere? State its importance. What is

responsible for its depletion ? Write one harmful effect of ozone depletion.



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19. What are the reactions involved for ozone layer depletion in the stratosphere?



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20. Name three green house gases.



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21. Name the three important water pollutants.



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22. What do you understand by waste water reclamation ?



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23. What is soil pollution and name the common soil pollutants?



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24. Green chemistry involves



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25. What are green chemicals?



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Short Answer Type Question

1. What do you understand by environment?



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2. Name the different segments of environment.



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3. What is biosphere?



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4. What do you understand by pollution and environmental pollutants ?



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5. What are the main causes of environmental deterioration ?





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6. What are biodegradable and non-biodegradable pollutants ?



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7. Define air pollution. What are the main pollutants ?



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8. What do you understand by primary and secondary air pollutants ? Give some examples.



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9. Name a few atmospheric pollutants and their sources of origin.



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10. Which oxides of nitrogen cause air pollution and how?



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11. Why is the presence of carbon monoxide in the atmosphere undesirable ?



Watch Video Solution

12. What are photochemical oxidants ? Give two examples.



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13. What are particulates and why is their presence in the atmosphere is harmful?



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14. State four steps to be taken to control air pollution.



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15. Give the important characteristics of the major atmospheric regions.



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16. What type of species are usually present in the atmosphere ?



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Watch Video Solution

24. What are the reactions involved for ozone layer depletion in the stratosphere?



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25. State two effects of ozone depletion.



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26. Greenhouse effect is



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27. Define water pollution and name the common water pollutants.



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28. What is soil pollution and name the common soil pollutants?



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29. Define Water pollution



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30. What is soil pollution and how is it caused ? Give a brief account of the measures which can reduce it.



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31. CFCs are responsible for



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32. Why is green chemistry regarded as an alternative tool for reducing pollution ?



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33. What do you understand by

(i) polar stratospheric clouds

(ii) polar vortex ?



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34. What is the use of solubility of oxygen and carbon dioxide in water?



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35. How does oxygen get dissolved in water and how is water deoxygenated ?



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36. What do you understand by COD?



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37. What do you mean by green chemistry?

How will it help decrease environmental pollution?



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Essay Long Answer Type Questions

1. What do you understand by environment?



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2. Define air pollution. What are the main pollutants ?



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3. Name a few atmospheric pollutants and their sources of origin.



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4. Define air pollution and discuss the important air pollution control measures.



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5. What is photochemical smog?



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6. What is acid rain and how is it formed ?



[Watch Video Solution](#)

7. How is ozone formed in the upper atmosphere? State its importance. What is responsible for its depletion ? Write one harmful effect of ozone depletion.



[Watch Video Solution](#)

8. What do you understand by Green House effect?



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9. How can water pollution be controlled?



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10. What is soil pollution and how is it caused ? Give a brief account of the measures which can reduce it.



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11. What is industrial pollution ? Discuss the important factors which make industries a major source of pollution.



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12. What do you mean by green chemistry?
How will it help decrease environmental pollution?



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Objective Multiple Choice Type Questions

1. The biosphere extends from about

A. 60 m below sea level to about 60 m
above the level

B. 600 m below sea level to about 600 m
above the sea level

C. 6000 m below sea level to about 6000 m
above the sea level

D. 10,000 m below sea level to about 10,000
m above the sea level.

Answer: C



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2. The environmental pollutants are

- A. physical pollutants
- B. chemical pollutants
- C. biological pollutants
- D. all of these.

Answer: D



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3. Which of the following is a non-biodegradable pollutant ?

A. DDT

B. Sewage

C. Plant leaves

D. Domestic wastes

Answer: A



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4. Which of the following is a secondary pollutant ?

A. CO

B. SO_2

C. NO

D. NO_2

Answer: D



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5. The presence of SO_3 to an extent of 1 ppm in air is

- A. tolerable
- B. harmful
- C. very harmful
- D. dangerous

Answer: B



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6. The major source of CO pollution is

- A. vehicular exhaust
- B. industrial processes
- C. forest fires
- D. deforestation.

Answer: A



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7. Los Angeles smog is

- A. London smog
- B. industrial smog
- C. photochemical smog
- D. none of these.

Answer: C



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8. Which of the following gases does not cause acid rain ?

A. N_2O

B. NO_2

C. SO_2

D. Cl_2

Answer: A



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9. The depletion of ozone layer

A. increases the intensity of UV radiations reaching the earth

B. decreases the intensity of UV radiations reaching the earth

C. has no effect on the intensity of UV radiations reaching the earth

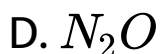
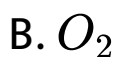
D. reduces air pollution.

Answer: A



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



Answer: B



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11. Identify the incorrect statement from the following

A. Oxides of nitrogen in the atmosphere can cause the depletion of ozone layer.

B. Ozone absorbs the intense ultraviolet radiations of the sun.

C. Depletion of ozone layer is because of its chemical reactions with chlorofluoro alkanes.

D. Ozone absorbs infrared radiations.

Answer: D



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12. What is DDT among the following :

A. Greenhouse gas

B. A fertilizer

C. Biodegradable pollutant

D. Non-biodegradable pollutant

Answer: D



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13. Which one of the following statements is not true

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

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

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

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

Answer: A



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14. Which of the following statements about photochemical smog is not correct ?

A. Carbon monoxide does not play any role in photochemical smog formation.

B. Photochemical smog is an oxidising agent in character.

C. Photochemical smog is formed through photochemical reaction involving solar energy.

D. Photochemical smog does not cause irritation in eyes and throat.

Answer: D



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15. Which of the following is not a common component of photochemical smog ?

A. Ozone

B. Acrolein

C. Peroxyacetyl nitrate

D. Chlorofluorocarbons

Answer: D



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16. The gas leaked from a storage tank of the Union Carbide plant in Bhopal gas tragedy was

A. methylisocyanate

B. methylamine

C. ammonia

D. phosgene

Answer: A



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17. Which of the following is a sink for CO?

A. Haemoglobin

B. Microorganisms present in the soil

C. Oceans

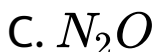
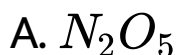
D. Plants

Answer: B



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18. Which oxide of nitrogen is not a common pollutant introduced into the atmosphere both due to natural and human activity?



Answer: A



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19. Among the following, the one that is not a greenhouse gas is :

A. Ozone

B. sulphur dioxide

C. nitrous oxide

D. methane.

Answer: B



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20. The primary pollutant that leads to photochemical smog is :

A. acrolein

B. Ozone

C. sulphur dioxide

D. nitrogen oxides.

Answer: D



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21. The atmosphere between the heights 10 to 50 kilometer above the Sea level is:

A. troposphere

B. thermosphere

C. stratosphere

D. mesosphere.

Answer: C



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22. Excessive release of CO_2 into the atmosphere results in :

A. depletion of ozone

B. polar vortex

C. global warming

D. formation of smog.

Answer: C



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23. Assertion : Ozone is destroyed by *CFCs* in the upper stratosphere.

Reason : Ozone holes increase the amount of *UV* radiation reaching the earth.

A. Assertion is false, but the reason is correct

B. Assertion and reason are incorrect

C. Assertion and reason are both correct, and the reason is the correct explanation for the assertion

D. Assertion and reason are correct, but the reason is not the correct explanation for the assertion.

Answer: D



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24. Which is wrong with respect to our responsibility as a human being to protect our environment?

A. Restricting the use of vehicles

B. Avoiding the use of flood-lighted facilities

C. Setting up compost tin in gardens

D. Using plastic bags.

Answer: D



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True Or False Type Questions

1. Biosphere is not a segment of the environment.



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2. Polythene is a non- biodegradable pollutant .



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3. Smoke is a primary pollutant.



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4. Deforestation has no effect on environment

.



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5. If CO_2 is absent in the atmosphere of earth,
then



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6. N_2O is a major air pollutant.



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7. Particulates may be viable as well as non-viable .



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8. The dust particles present in air can be minimised by extraction ventilation .



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9. What is smog? How is classical smog different from photochemical smogs?



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10. Chlorofluorocarbon deplete the ozone layer .



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Fill In The Blanks Type Questions

1. Microorganisms and overpopulation arepollutants .



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2. Ozone layer protect us from the harmful effects of.....radiations.



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3. The pollutants which mix up with air the in the liquid or solid state are called



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4. Carbon monoxide combines with the
Of the blood to formwhich is unable to
transport.....in the body.



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5. Among NO and NO_2 ,.....is more harmful.



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6. PAN are formed by the combination of aldehydes withand oxides ofin the presence of sunlight .



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7. The region in the altitude range of about 50km to 100 km is called



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8. The formation of photochemical smog can be reduced by decreasing the concentrations ofand..... .



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9. The gases which cause acid rain are



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10. Besides CO_2 , CH_4 , CFC 's andcan also cause greenhouse effect.



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Assertion Reason Type Questions

1. Assertion : The formation of smog can be reduced by using catalytic converters in automobiles .

Reason : Catalytic converters reduce the

quantity of hydrocarbons and nitrogen oxides in the smoke coming out of the exhaust pipes of automobiles .

A. If both Assertion and Reason are CORRECT and Reason is the CORRECT explanation of the Assertion.

B. If both Assertion and Reason are CORRECT but Reason is not the CORRECT explanation of the Assertion .

C. If Assertion is CORRECT but Reason is
INCORRECT .

D. If Assertion is INCORRECT but Reason is
CORRECT

Answer: a



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2. Assertion : The acid rain usually occurs in towns having large number of industries.

Reason : Industries released gases cause acid

rain to occur.

If both Assertion and Reason are CORRECT and Reason is the CORRECT explanation of the Assertion.

If both Assertion and Reason are CORRECT but Reason is not the CORRECT explanation of the Assertion .

If Assertion is CORRECT but Reason is INCORRECT .

If Assertion is INCORRECT but Reason is CORRECT

A. If both Assertion and Reason are
CORRECT and Reason is the CORRECT
and Reason is the CORRECT explanation
of the Assertion.

B. If both Assertion and Reason are
CORRECT but Reason is not the CORRECT
explanation of the Assertion .

C. If Assertion is CORRECT but Reason is
INCORRECT .

D. If Assertion is INCORRECT but Reason is
CORRECT

Answer: c



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3. Assertion : CFC's hazardous to the environment .

Reason : CFC's contain fluorine which is a highly reactive gas .

A. If both Assertion and Reason are
CORRECT and Reason is the CORRECT
explanation of the Assertion.

B. If both Assertion and Reason are
CORRECT but Reason is not the CORRECT
explanation of the Assertion .

C. If Assertion is CORRECT but Reason is
INCORRECT .

D. If Assertion is INCORRECT but Reason is
CORRECT

Answer: b



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4. Assertion : The formation of ozone hole is mainly observed in the stratosphere over Antarctic.

Reason Polar stratospheric cloud formed over Antarctica helps in the depletion of Ozone hole.

A. If both Assertion and Reason are CORRECT and Reason is the CORRECT explanation of the Assertion.

B. If both Assertion and Reason are CORRECT but Reason is not the CORRECT explanation of the Assertion .

C. If Assertion is CORRECT but Reason is INCORRECT .

D. If Assertion is INCORRECT but Reason is
CORRECT

Answer: a



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5. Assertion : The chemicals showing green colour in most their reactions are called green chemicals .

Reason : Green chemicals are friendly to the enviroment.

A. If both Assertion and Reason are CORRECT and Reason is the CORRECT explanation of the Assertion.

B. If both Assertion and Reason are CORRECT but Reason is not the CORRECT explanation of the Assertion .

C. If Assertion is CORRECT but Reason is INCORRECT .

D. If Assertion is INCORRECT but Reason is
CORRECT

Answer: d



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Ncert Text Book Exercise

1. Define environmental chemistry.



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2. Explain tropospheric pollution in 100 words .



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3. Carbon monoxide gas is more dangerous than carbon dioxide gas. Why?



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4. List gases which are responsible for greenhouse effect.



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5. Statues and monuments in India are affected by acid rain. How?



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6. What is smog? How is classical smog different from photochemical smogs?



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7. Write down the reactions involved during the formation of photochemical smog.



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8. What are the harmful effects of photochemical smog and how can they be controlled?



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9. What are the reactions involved for ozone layer depletion in the stratosphere?



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10. What do you mean by ozone hole? What are its consequences?



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11. What are the major causes of water pollution? Explain.



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12. Have you ever observed any water pollution in your area? What measures would you suggest to control it?



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13. What do you mean by Biochemical Oxygen Demand (BOD)?



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14. Do you observe any soil pollution in your neighbourhood? What efforts will you make for controlling the soil pollution?



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15. What are pesticides and herbicides? Explain giving examples.



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16. What do you mean by green chemistry?
How will it help decrease environmental pollution?



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17. What would have happened if the greenhouse gases were totally missing in the earth's atmosphere? Discuss.



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18. A large number of fish are suddenly found floating dead on a lake. There is no evidence of toxic dumping but you find an abundance of phytoplankton. Suggest a reason for the fish kill.





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19. How can domestic waste be used as manure?



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20. For your agricultural field or garden you have developed a compost producing pit. Discuss the process in the light of bad odour, flies and recycling of wastes for a good produce.



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