



CHEMISTRY

BOOKS - GRB CHEMISTRY (HINGLISH)

ENVIRONMENTAL CHEMISTRY

Straight Objective Type

1. Which of the following cannot be degraded by natural processes ?

(P) DDT , (Q) Plastic materials

(R) Heavy metals , (S) Nuclear wastes

A. P,Q,S

B. Q,S

C. Q,R

D. All of these

Answer: D



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2. Which statement does not distinguish troposphere and stratosphere ?

A. It is a turbulent dusty zone containing air, much water vapour and clouds.

B. It is the region of strong air movement and cloud formation.

C. It contains dinitrogen, dioxygen, ozone and little water vapour.

D. it is a part of atmosphere.

Answer: D



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3. Which is not a gaseous air pollutant ?

A. Smoke

B. Hydrocarbons

C. Ozone

D. Oxides of sulphur

Answer: A



4. Choose the incorrect statement.

A. Sulphur dioxide is a poisonous gas to both plants and animals.

B. Even a low concentration of sulphur dioxide causes respiratory diseases and stiffness of flower buds.

C. Uncatalysed oxidation of sulphur dioxide is slow.

D. Rate of production of NO_2 is faster when nitric oxide reacts with ozone in the stratosphere.

Answer: B



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5. The irritant redhaze in the traffic and congested places is due to:

A. oxides of sulphur

B. SO_2 only

C. oxides of nitrogen

D. SO_3 only

Answer: C



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6. Incomplete combustion of automobile fuel leads to formation of :

A. NO_2

B. SO_2 only

C. SO_3

D. hydrocarbons

Answer: D



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7. Which of the following are toxic?

A. NO_2

B. SO_2

C. CO

D. All of these

Answer: D



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8. Which of the following process (es) release CO_2 in atmosphere ?

A. Respiration

B. Burning of fossil fuels for energy

C. Manufacture of cement

D. All of the above

Answer: D



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9. CO_2 gas is present in :

A. troposphere only

B. stratosphere only

C. uniformly in the whole atmosphere

D. 0.03 % by volume of the atmosphere

Answer: A



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10. The gas mainly responsible for global warming is :

A. CO_2

B. CH_4

C. O_3

D. CFC_s

Answer: A



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11. Which of the following is mainly responsible for damaging the ozone layer ?

A. CO_2

B. CH_4

C. NO

D. *CFCs*

Answer: D



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12. The pH of normal water is :

A. 5.6

B. 6.0

C. 7.0

D. 7.6

Answer: A



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13. Criteria for rain water to be called acid rain is
for pH:

A. < 5.6

B. < 1.0

C. < 7.0

D. < 6.0

Answer: A



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14. Major contributors to acid rain are :

(P) CO_2 , (Q) SO_2

(R) NO_2 , (S) SO_3

A. Q and R

B. Q only

C. R and S

D. P, Q, R, S

Answer: A



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15. Formation of acid from polluting oxides involves :

A. catalytic oxidation

B. hydrolysis

C. both (a) and (b)

D. hydration

Answer: C



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16. Choose the incorrect match regarding acid rain.

A. Aerosol particles of oxides-Wet deposition

B. Aerosol particles of ammonium salts-Wet deposition

C. SO_2 absorption--Dry deposition

D. SO_2 absorption-Wet deposition

Answer: D



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17. Viable particulates are :

A. smoke

B. dust

C. fumes

D. none of these

Answer: D



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18. Non-viable particulates are :

A. bacteria

B. fungi

C. moulds

D. none of these

Answer: D



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19. Choose the correct statement regarding "classical smog".

A. It occurs in a cool humid climate

B. It is a mixture of smoke, fog and sulphur dioxide

C. Chemically it is a reducing mixture

D. All of the above

Answer: D



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20. Choose the correct statement regarding photochemical smog.

- A. It occurs in warm, dry and sunny climate.
- B. It mainly results from the action of sunlight on unsaturated hydrocarbons and nitrogen oxides produced by automobiles and factories.
- C. It has high concentration oxidising agents.
- D. All of the above

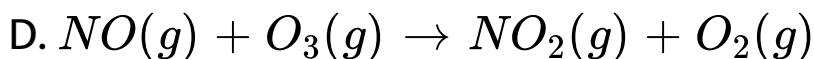
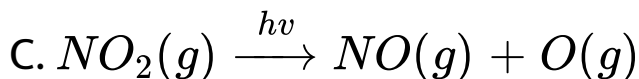
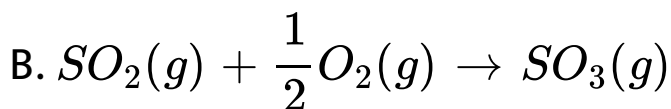
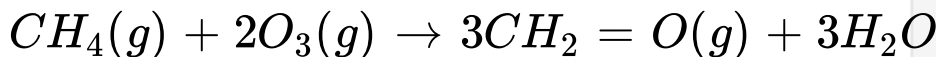
Answer: D



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21. Which reaction is not involved in photochemical smog formation ?

A.



Answer: B



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22. Common components of photochemical smog may not contain:

A. (PAN) peroxyacetylnitrate

B. acrolein

C. formaldehyde

D. SO_2

Answer: D



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23. The main reason of ozone layer depletion is :

A. *CFCs*

B. *Cl₂*

C. *SO₂*

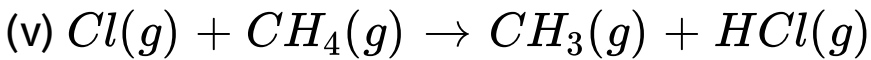
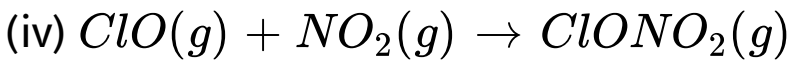
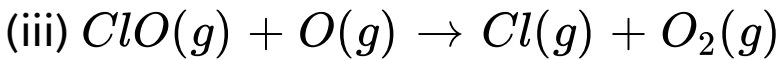
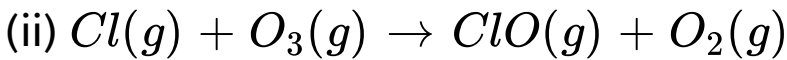
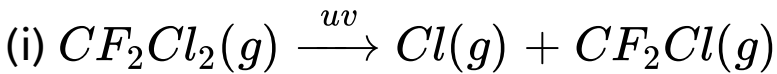
D. *NO*

Answer: A

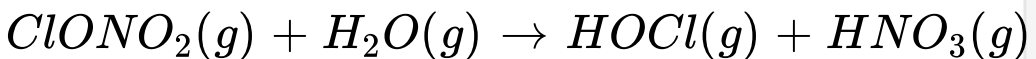


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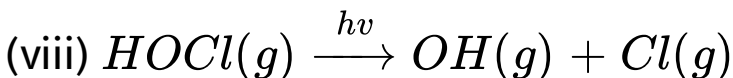
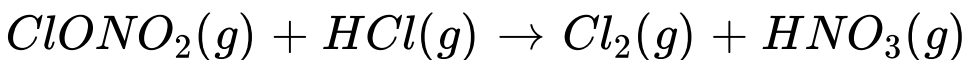
24. Ozone hole formation mechanism involves the following reactions:

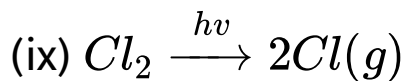


(vi)



(vii)





Choose the correct set of reaction occurring according to the season in Antarctica.

A. Summer -(iv), (v)

B. Winter -(vi), (vii)

C. Spring -(viii), (ix)

D. All of these

Answer: D



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25. Clean water has BOD value:

A. < 5 ppm

B. < 6 ppm

C. < 17 ppm

D. > 7 ppm

Answer: A



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26. The process in which nutrient enriched water bodies support a dense plant population, which kills animal life by depriving it of oxygen and results in subsequent loss of biodiversity is known as :

- A. Eutrophication
- B. Biochemical oxygen demand
- C. Water pollution
- D. Soil pollution

Answer: A



27. Choose the correct set for international standards for drinking water.

(P) $F^{\ominus} < 2 \text{ ppm}$, (Q) $Pb < 50 \text{ ppb}$

(R) $SO_4^{2-} \leq 500 \text{ ppm}$, (S) $NO_3^- \leq 50 \text{ ppm}$

A. P only

B. P and Q only

C. Q and S only

D. P, Q, R and S

Answer: D



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28. Blue baby syndrome is caused due to excess :

A. fluoride

B. sulphate

C. nitrate

D. lead

Answer: C

29. Choose the incorrect match for maximum prescribed concentration of some metals in drinking water.

	Metal	Maximum Concentration (ppm or mg dm^{-3})
(i)	Fe, Al	0.2
(ii)	Mn	0.05
(iii)	Cu	3.0
(iv)	Zn	5.0
(v)	Cd	0.005
(vi)	Pb	50

A. (i), (vi) only

B. (v) only

C. (vi) only

D. (iii), (iv) only

Answer: C



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30. Fly ash and slag are used by :

A. steel industry

B. cement industry

C. thermal power plants

D. all of these

Answer: B



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31. The gases responsible for Green house effect are :

A. CH_4

B. $CFCs$

C. H_2O vapour

D. all of these

Answer: D



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32. When rain is accompanied by a thunderstorm, the collected rain water will have a pH :

A. slightly higher than that when the thunderstorm is not there

B. uninfluenced by occurrence of
thunderstorm

C. which depends on the amount of dust in
air

D. slightly lower than that of rain water
without thunderstorm

Answer: D



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33. Smog is essentially caused by the presence of

A. O_2 and O_3

B. O_3 and N_2

C. oxides of sulphur and nitrogen

D. O_2 and N_2

Answer: C



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34. Repeated use of which one of the following fertilizers would increase the acidity of the soil?

A. Potassium nitrate

B. Urea

C. Superphosphate of lime

D. Ammonium sulphate

Answer: D



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35. Identify the wrong statements in the following.

A. Chlorofluorocarbons are responsible for ozone layer depletion.

B. Greenhouse effect is responsible for global warming.

C. Ozone layer does not permit infrared radiation from the sun to reach the earth.

D. Acid rains is mostly because of oxides of nitrogen and sulphur.

Answer: C



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36. 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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37. 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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38. Statement I Nitrogen and oxygen are the main components in the atmosphere but these do not react to form oxides of nitrogen.

Statement II The reaction between nitrogen and oxygen requires high temperature.

A. Both assertion and reason are correct, but the reason is not the correct explanation for the assertion.

B. The assertion is incorrect, but the reason is correct.

C. Both the assertion and reason are incorrect.

D. Both assertion and reason are correct, and the reason is the correct explanation for the assertion.

Answer: A



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39. The concentration of fluoride, lead, nitrate and iron in a water sample from an

underground lake was found to be 1000 ppb, 40 ppb, 100 ppm and 0.2 ppm, respectively. This water is unsuitable for drinking due to high concentration of

A. fluoride

B. lead

C. nitrate

D. iron

Answer: C



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40. A water sample has ppm level concentration of following anions

$$F^- = 10, SO_4^{2-} = 100, NO_3^- = 50$$

the anion/anions that make/makes the water sample unsuitable for drinking is/are

A. only NO_3^-

B. both SO_4^{2-} and NO_3^-

C. only F^-

D. only SO_4^{2-}

Answer: C



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