



CHEMISTRY

BOOKS - ARIHANT PUBLICATION

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**HYDROGEN , OXYGEN , NITROGEN
AND CHLORINE**

Exam Booster For Cracking Exam

1. The radioactive isotopes of hydrogen is :

A. hydrogen

B. parahydrogen

C. deuterium

D. tritium

Answer: D



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2. The metal which cannot liberate hydrogen from acid is

A. platinum

B. silver

C. gold

D. All of these

Answer: D



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3. Hydrogen from HCl can be prepared by

A. copper

B. phosphorus

C. magnesium

D. mercury

Answer: C



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4. In Bosch process hydrogen is obtained from

A. natural gas

B. water

C. water gas

D. None of these

Answer: C



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5. Hydrogen was discovered by

A. Lavolsler

B. Cavendish

C. Dalton

D. Newton

Answer: B



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6. Nascent hydrogen consists of

A. hydrogen atom with excess of energy

B. hydrogen ions in excited state

C. hydrogen molecule with excess of
energy

D. solvated proton

Answer: A



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7. Hydrogen acts as a

A. reducing agent

B. oxidising agent

C. Both reducing and oxidising agent

D. Neither reducing nor oxidising agent

Answer: C



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8. The oxidation states shown by hydrogen are

A. -1 and $+1$

B. Only 0

C. $+1$, -1 , 0

D. *Only* $+1$

Answer: C



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9. Hydrogen cannot reduce

A. CuO

B. Fe_2O_3

C. Al_2O_3

D. SnO_3

Answer: C



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10. The property of hydrogen which distinguishes it from other alkali metals is

- A. its reducing character
- B. its electropositive character
- C. its affinity for non-metals
- D. its non-metallic character

Answer: D



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11. Which of the following metals adsorbs hydrogen ?

A. Zn

B. Pd

C. Al

D. K

Answer: B



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12. The sum of the number of neutrons and protons in the isotopes of hydrogen is

A. 6

B. 5

C. 4

D. 3

Answer: A



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13. Atomic hydrogen has a life time of

A. fraction of second

B. 1 day

C. 1h

D. 1 min

Answer: A



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14. The boiling point of liquid hydrogen is

A. $2.53^{\circ}C$

B. $25.3^{\circ}C$

C. $252^{\circ}C$

D. $-253^{\circ}C$

Answer: D



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15. In Lane process reduction of steam is carried out by heated

A. Ca

B. Fe

C. K

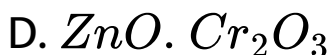
D. Sr

Answer: B



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16. Dihydrogen reacts with CO at 700 K in the presence of a catalyst to form methanol, the catalyst is



Answer: D



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17. When hydrogen is passed over Pd, hydrogen is adsorbed over the surface of Pd, this process is called

A. hydrogenation

B. occlusion

C. evaporation

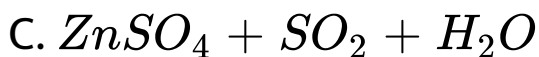
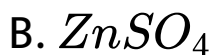
D. halogenation

Answer: B



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18. Zinc react with conc. To form



D. None of these

Answer: A



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19. Hydrogen is collected

A. over water

B. over mercury

C. over alcohol

D. None of these

Answer: A



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20. Which of the following metals can displace hydro-gen from dilute acids?

A. Aluminium

B. Copper

C. Gold

D. Silver

Answer: A



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21. Consider the following types of hydrides

1. Covalent hydride

2. Ionic hydride

3. Metallic hydride

Which of these are formed by hydrogen?

A. 1 and 2

B. 1 and 3

C. 2 and 3

D. All of these

Answer: D





22. Which one of the following elements cannot displace hydrogen gas from a dilute acid ?

A. Calcium

B. Copper

C. Magnesium

D. Zinc

Answer: B

23. Hydrogen gas is not obtained when zinc reacts with

A. cold water

B. dil H_2SO_4

C. dil HCl

D. hot 20% NaOH

Answer: A

24. Consider the following statements concerning ortho and para hydrogen

1. Ortho is less stable than para.
2. Vapour pressure of ortho is more than of para
3. Magnetic moment of para is zero while in case of ortho it is twice that of a proton.
4. Conductivity of para is less than that of ortho.

Which of these statements are correct?

A. 1 and 4

B. 2 and 3

C. 2 and 4

D. 3 and 4

Answer: D



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25. Tritium is composed of

A. 1 proton, 1 electron and 2 neutron

B. 1 proton, 2 electron and 1 neutron

C. 2 proton and 1 electron

D. 1 proton, 1 electron and 1 neutron

Answer: A



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26. Which is most abundant in Earth's crust?

A. Ca

B. C

C. Si

D. O

Answer: D



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27. Oxygen was discovered by

A. Priestley

B. Boyle

C. Scheele

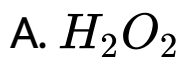
D. Cavendish

Answer: A



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28. Which of the following is neutral oxide?



Answer: C



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29. Which is a chalcogen?

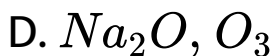
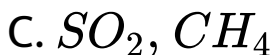
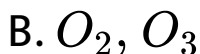
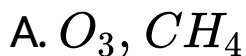
- A. Element with atomic no. 8
- B. Element with atomic no. 34
- C. Element with atomic no. 16
- D. All of these

Answer: D



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30. The gases respectively absorbed by alkaline pyrogallon and oil of cinnamon is.



Answer: B



31. O_2 molecule is paramagnetic in

- A. solid state
- B. liquid state
- C. gaseous state
- D. All of these

Answer: D



32. Oxygen is obtained by heating

A. ammonium dichromate

B. sodium peroxide

C. potassium permagnate

D. green vitrol

Answer: C



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33. The molecule having one unpaired electrons is .

A. CO

B. NO

C. CN

D. O_2

Answer: D



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34. Incorrect about O_2 molecule?

A. It is attracted towards magnetic field

B. It is most abundant element in the
group

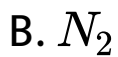
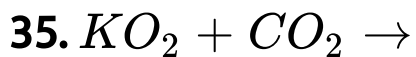
C. Most of its reactions are endothermic

D. It is little active under normal conditions

Answer: C



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Answer: C



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36. Carbogin is

A. pure form of carbon

B. mixture of CO and CO_2

C. $COCl_2$

D. mixture of O_2 and CO_2

Answer: D



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37. Which occurs free in nature?

A. I_2

B. Al

C. P

D. O

Answer: D



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38. Anomalous behaviour of oxygen is due to

A. small atomic size

B. non-availability of d-orbitals

C. high electronegativity

D. All of the above

Answer: D



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39. Mixture of O_2 and H_2 is used as

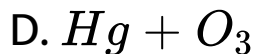
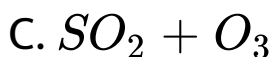
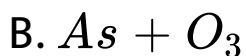
- A. rocket fuel
- B. welding torch
- C. water gas
- D. oxidising agent

Answer: B



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40. Oxygen is not evolved in a reaction between



Answer: C



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41. Which is the best oxidising agent?

A. S

B. O

C. NO

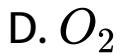
D. Se

Answer: B



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42. Which of the following is formed by the action of water on sodium?

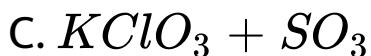
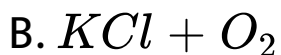
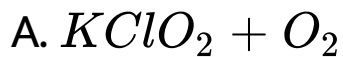


Answer: A



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43. On heating $KClO_3$ we get :

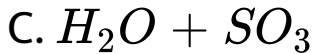
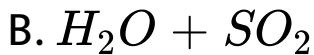
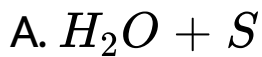


Answer: B



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44. H_2S react with O_2 to form



Answer: A



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45. Which out of the following gases is obtained when ammonium dichromate is heated?

A. Oxygen

B. Ammonia

C. Nitrogen

D. Nitrous oxide

Answer: C



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46. Which of the following is obtained when N_2 reacts with calcium carbide?

- A. Calcium cyanate
- B. Calcium acetate
- C. Calcium cyanamide
- D. Calcium carbonate

Answer: C



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47. Nitrogen can be obtained from air by removing

A. oxygen

B. hydrogen

C. (a) and (b)

D. carbon dioxide

Answer: A



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48. Mo is used in the manufacture of

A. NH_3

B. HNO_2

C. HNO_3

D. HCl

Answer: A



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49. Oxidation of NO in air produces

A. N_2O

B. N_2O_3

C. NO_2

D. N_2O_5

Answer: C



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50. Nitrogen forms oxides.

A. 3

B. 4

C. 5

D. 6

Answer: C



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51. Which does not form complex?

A. N

B. P

C. As

D. Bi

Answer: A



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52. Nitrogen molecule is chemically less active.

This is due to its

- A. small atomic radius
- B. high dissociation energy
- C. high electronegativity
- D. None of the above

Answer: B



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53. Ammonia can be dried by :

A. conc. H_2SO_4

B. P_4O_{10}

C. CaO

D. Anhydrous $CaCl_2$

Answer: C



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54. Oxidation of ammonia yields

A. NO_2

B. N_2O

C. N_2O_5

D. NO

Answer: D



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55. The name azota is used for

A. nitrogen

B. oxygen

C. hydrogen

D. None of these

Answer: A



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56. Nitrogen can be purified from the impurities of oxides of nitrogen and ammonia by passing through

A. conc. HCl

B. alkaline solution of pyrogallol

C. solution of $K_2Cr_2O_7$

D. KOH

Answer: B



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57. Nitrogen combine with metals to form

A. nitrites

B. nitrates

C. nitrides

D. cyanides

Answer: C



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58. The element which is essential in nitrogen fixation is

A. zinc

B. copper

C. molybdenum

D. boron

Answer: C



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59. Chlorine was discovered by

A. Davy

B. Priestley

C. Rutherford

D. Scheele

Answer: D



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60. Chlorine gas is dried over

A. CaO

B. NaOH

C. KOH

D. conc. H_2SO_4

Answer: D



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61. Deacon's process is used in the manufacture of

A. bleaching powder

B. sulphuric acid

C. nitric acid

D. chlorine

Answer: D



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62. In the preparation of chlorine from HCl , MnO_2 acts as

A. oxidising agent

B. reducing agent

C. catalytic agent

D. dehydrating agent

Answer: A



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63. When Cl_2 gas is passed through hot and conc. solution of KOH, following compound is formed

A. KCl

B. $KClO_3$

C. $KClO_2$

D. $KClO_4$

Answer: B



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64. One gas bleaches the colour of flowers by reduction while the other by oxidation. They are

A. CO_2 and Cl_2

B. H_2S and Br_2

C. Cl_2 and H_2S

D. SO_2 and Cl_2

Answer: D



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65. When Cl_2 gas is passed through cold and dilute solution of KOH, following compound is formed

A. $KClO_3$

B. $KClO$

C. $KClO_2$

D. $KClO_4$

Answer: B



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66. Chlorine is used in the purification of

A. Au

B. Ag

C. Cu

D. Na

Answer: A



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67. Chlorine is formed when dil HCl is treated with

A. $KMnO_4$

B. $K_2Cr_2O_7$

C. MnO_2

D. All of these

Answer: D



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68. When chlorine in excess is treated with ammonia, the product formed is used as

A. antipyretic

B. explosive

C. analgesic

D. laboratory agent

Answer: B



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69. A quick supply of C_{12} gas may be made by reacting crystals of $KMnO_4$ with a concentrated solution of

A. potassium chloride

B. sodium chloride

C. bleaching powder

D. hydrochloric acid

Answer: D



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70. The bleaching action of moist chlorine is due to the formation of

A. HCl

B. HClO

C. $HClO_4$

D. $HClO_3$

Answer: B



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71. Chlorine is mixed to water so that

A. bacteria are killed

B. dirt is removed

C. water is cleaned

D. suspension is removed

Answer: A



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72. An aqueous solution of chlorine contains

A. Only HOCl

B. Only HCl

C. HCl and HOCl

D. HCl, HOCl and chlorine

Answer: D



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73. When an aqueous solution of hypochlorite is heated

A. chlorine is evolved

B. chlorite is formed

C. chlorate is formed

D. chlorine peroxide is formed

Answer: C



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74. What happens when Cl_2 gas is passed through a mixture of NaF, NaBr and NaI?

A. F_2 and I_2 are evolved

B. Only F_2 is liberated

C. Br_2 and I_2 are liberated

D. Only Br_2 is liberated

Answer: C



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