CHEMISTRY

BOOKS - S DINESH & CO CHEMISTRY (HINGLISH)

THE NOBLE GASES

Mcq

1. The valence shell electronic configuration of noble gases except helium is

A. ns^2np^3

B. ns^2np^4

C. ns^2np^5

D. ns^2np^6

Answer: D

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2. Which electronic configuration corresponds to minimum energy and maximum stability ?

A. $(n-1)d^{10}ns^1$

B. $(n-1)d^5ns^1$

C. ns^2np^6

D. ns^2np^3

Answer: C

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3. The noble gases found dissolved in some spring waters are

A. argon and helium

B. neon and argon

C. krypton and xenon

D. xenon and radon.

Answer: A

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4. Which of the following statements concerning Noble gases in incorrect ?

A. They are used to provide inert atmosphere in many chemical reactions

B. They are sparingly soluble in water

C. They form diatomic molecules

D. Some of them are used for advertising signs.

Answer: C

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5. Among noble gases, only xenon reacts with flourine to form stable xenon fluorides, because xenon

A. has the largest size

B. has lowest ionisation energy

C. has highest heat of vapourisation

D. is the most readily available noble gas.

Answer: B

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6. The high ionisation potential of noble gases is due to :

A. large atomic size

B. stable valence shell electronic configuration

C. high nuclear charge

D. low electron affinity.

Answer: B

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7. The ease of liquefaction of noble gases decreases in the order

A. $He > Ne > Ar > Kr > Xe$

B. $Xe > Kr > Ar > Ne > He$

C. $Kr > Xe > He > Ar > Xe$

D. $Ar > Kr > Xe > He > Ne.$

Answer: B

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8. Which is called stranger gas ?

A. N_2O

B. He

C. Xe

D. $Kr.$

Answer: D

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9. The credit of discovery of Radon goes to

A. Rayleigh

B. Cavendish

C. Frankland and Lockyer

D. F.E. Dron.

Answer: D

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10. Maximum number of compounds are formed by

A. He

B. Ne

C. Ar

D. Xe.

Answer: D

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11. The number of lone pairs of electrons on xenon atom in XeF_4 molecule is

A. Three

B. One

C. Two

D. None.

Answer: C

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12. The electron affinity of Noble gases is

A. high

B. low

C. zero

D. negative.

Answer: C

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13. On moving down the group from He to Rn the boiling points.

A. increase

B. decrease

C. increase but irregularly

D. decrease but irregularly.

Answer: A

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14. The molecular structure of noble gases are

A. Diatomic

B. Monoatomic

C. Tetraatomic

D. Triatomic.

Answer: B

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15. Which of the following statements regarding noble gases is false ?

A. They are monoatomic in nature

B. All of them are gases at room temperature

C. They are completely insoluble in water

D. They have zero electron affinity.

Answer: C

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16. Which of the noble gas has highest polarizability

A. He

B. Ar

C. Kr

D. Xe.

Answer: D

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17. As we move along the period, the atomic radii decreases. Which of the following group contradicts the above statement ?

A. Alkali metals

B. Carbon family

C. Halogen family

D. Noble gases.

Answer: D

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18. Of the following species, one which is nonexistent is

A. XeF_4

B. XeF_2

C. XeF_5

D. XeF_6.

Answer: C

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19. In solid argon , the atoms are held together by

A. Ionic Bonds

B. Covalent Bonds

C. Hydrogen Bonds

D. van der Waal's forces.

Answer: D

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20. The structure of XeF_4 is

A. Tetrahedral

B. Square planar

C. Linear

D. Octahedral.

Answer: B

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21. In XeF_4 molecule, the two lone pairs of electrons on Xe atom occupy which of the following positions on the square planar structure

A. Two adjacent corners on the planar square

B. Two diagonally opposite corners on the planar square

C. one corner of the planar square and one transposition

D. Two transpositions.

Answer: D

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22. The noble gas which is radioactive is

A. Argon

B. Helium

C. Radon

D. Xenon.

Answer: C

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23. XeF_2 molecule is

A. Pyramidal

B. Square planar

C. Linear

D. Triangular.

Answer: C

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24. The gas which is used in air ships is

A. Ne

B. He

C. Ar

D. Xe.

Answer: B

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25. The coloured discharge tubes for advertisement mainly contains

A. Helium

B. Argon

C. Neon

D. Xenon.

Answer: C

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26. The noble gas whose ionization potential is closet to that of oxygen is

A. He

B. Ar

C. Kr

D. Xe.

Answer: D

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27. The idea which prompted bartlett to prepare first ever compound of noble gas was

A. high bond energy of Xe-F

B. low bond energy of F-F in F_2 molecules

C. ionization energies of Oxygen and Xenon are almost similar

D. None of these.

Answer: C

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28. Which of the following structures is most likely for $XeOF_4$?

A. Tetrahedral

B. Square pyramidal

C. Square planar

D. Octahedral.

Answer: B

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29. Noble gases are also known as aerogens because

A. they are rarely found in atmosphere

B. argon, a noble gas is the most abundant gas of the atmosphere

C. they occur in air

D. None of the above.

Answer: C

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30. Which of the following is least soluble in water ?

A. Helium

B. Neon

C. Argon

D. Krypton.

Answer: A

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31. Xenon does not form compounds with

A. Oxygen

B. Fluorine

C. Bromine

D. None of these.

Answer: C

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32. The XeF_4 structure involves

A. sp^3 hybridization

B. sp^3d hybridization

C. sp^3d^2 hybridization

D. sp^3d^3 hybridization

Answer: C

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33. The number of lone pairs of electrons present on Xe in XeF_2 ?

A. 1

B. 2

C. 3

D. 4

Answer: C

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34. Shape of $XeOF_4$ is

A. Trigonal

B. See-saw

C. T-shape

D. Tetrahedral.

Answer: C

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35. The spectrum of He^+ is expected to be similar to that of

A. Na

B. Li^+

C. H

D. Be^{+2}.

Answer: C

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36. The structure of XeF_6 is

A. Octahedral

B. Distorted octahedral

C. Square antiprism

D. None.

Answer: B

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37. Shape of KrF_2 is

A. Linear

B. Triangular

C. Bent

D. Angular.

Answer: A

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38. The most abundant noble gas in the atmosphere is

A. Xe

B. Kr

C. Ar

D. He.

Answer: C

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39. Which of the following is an explosive compound ?

A. $XeOF_4$

B. $XeOF_2$

C. XeF_2

D. XeO_3.

Answer: D

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40. The lightest, non-inflammable gas is

A. O_2

B. N_2

C. H_2

D. He.

Answer: D

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41. A noble gas which is not absorbed by coconut charcoal is

A. He

B. N_2

C. Ar

D. Kr.

Answer: A

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42. Noble gases do not accur in .....

A. Ores

B. Sea water

C. Atmosphere

D. Natural gas.

Answer: B

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43. Neon gives a characteristic spectrum with

A. Green lines

B. Orange lines

C. Red lines

D. Yellow lines.

Answer: D

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44. The term 'Rare earth's' and 'Rare gases' are used for

A. Same elements

B. Different elements

C. Same compounds

D. Different compounds.

Answer: B

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45. Which of the following does not exist ?

A. XeF_4

B. KrF_4

C. OF_2

D. HeF_2.

Answer: D

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46. The lifting power of helium is_____of hydrogen.

A. 0.8

B. 0.74

C. 0.92

D. 0.99

Answer: C

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47. The forces of cohesion in liquid helium are

A. Ionic

B. Covalent

C. van der Waal's

D. Metallic.

Answer: C

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48. The shape of XeF_5^+ Ion is

A. Trigonal bipyramidal

B. Square pyramidal

C. Octahedral

D. Pentagonal.

Answer: B

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49. The formula of sodium perxenate is _____.

A. Na_3XeO_6

B. Na_4XeO_6

C. Na_2XeF_8

D. None.

Answer: B

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50. The structure of XeO_2F_2 is

A. Sea saw shape

B. T-shape

C. Tetrahedral

D. Square planar.

Answer: A

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51. Which of the following is not the correct uses of clathrates ?

A. In the separating of isotopes of noble gases

B. In transporting of isotopes of noble gases

C. Kr-85 clathrate provide a useful source of β-radiations

D. Clathrates compounds are used for producing compounds of noble gases.

Answer: D

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52. The inert gases can be isolated and separated by

A. Electrolysis of their compounds

B. Fractional distillation of liquid air

C. Adsorption and desorption on charcoal

D. Both (B) and (C).

Answer: D

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53. Which noble gas was detected first

A. He

B. Ne

C. Ar

D. Xe.

Answer: C

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54. $XeF_6 + PF_5 \rightarrow$

A. XeF_6

B. $[XeF]^+[PF_6]^-$

C. XeF_4

D. $[PF_4]^+[XeF_3]^-$

Answer: B

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55. Which mineral was used in the isolation of Helium

A. Pitch blende

B. Haematite

C. Monazite

D. Clevite.

Answer: D

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56. The noble gas He was discovered in the chromosphere of sun by_____.

A. Rayleigh

B. Ramsay

C. E.E. Dorn

D. Lockyer and Janseen.

Answer: D

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57. The first noble gas compound prepared by Bartlett is

A. $Xe^{+}[PtF_6]^{-}$

B. XeF_4

C. XeF_6

D. $XeOF_4$.

Answer: A

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58. Which compound is prepared by the following reaction

$$Xe + 2F_2 \xrightarrow[673K, 5-6atm]{Nivestel}$$

$(1:5 volume ratio)$

A. XeF_4

B. XeF_2

C. XeF_6

D. None of these.

Answer: B

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59. Calude's apparatus is used for the isolation of.....form liquid air :

A. Noble gases

B. Liquid nitrogen

C. Liquid oxygen

D. All of these.

Answer: D

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60. What is the main commercial source of helium?

A. Sun

B. Sea water

C. Minerals

D. Natural gas.

Answer: D

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61. Welding of magnesium can be done in an atmosphere of

A. O_2

B. N_2

C. He

D. All.

Answer: C

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62. A monoatomic gas reacts with fluorine to form a fluoride which dissolve in HF to give a conducting solution. The fluoride is

A. XeF_2

B. XeF_4

C. XeF_6

D. OF_2.

Answer: C

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63. Which of the noble gases is most reactive ?

A. He

B. Ne

C. Kr

D. Xe.

Answer: D

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64. First ever compound of a noble gas was prepared by

A. Ramsay

B. Berzelius

C. Cavandish

D. Bartlett.

Answer: D

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65. Helium - oxygen mixture is used by deep sea divers in preference to nitrogen-oxygen mixture, because

A. helium is much less soluble in blood than nitrogen

B. nitrogen is much less soluble in blood than helium

C. due to high pressure deep under sea nitrogen and oxygen react to give poisonous nitric oxide

D. Nitrogen is highly soluble in water.

Answer: A

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66. Compounds formed when the noble gases get entrapped in the cavities of crystal lattices of certain oreganic and inorganic compounds are known as

A. Interstitial compounds

B. Clathrates

C. Hydrates

D. Picrates.

Answer: B

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67. Which compound is prepared by the following reaction

$$Xe + 2F_2 \xrightarrow[673K\,,5-6atm]{Nivestel} (1:5 volume ratio)$$

A. XeF_2

B. XeF_6

C. XeF_4

D. $XeOF_2$.

Answer: C

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68. The noble gases which do not form any clatherate

A. He

B. Ar

C. Kr

D. Xe.

Answer: A

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69. XeF_6 on complete hydrolysis gives

A. Xe

B. XeO_2

C. XeO_3

D. $XeOF_2$.

Answer: C

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70. In Kroll and Icl process of the production of titaninum, the inert gas used is:

A. Ne

B. Kr

C. Ar

D. Xe.

Answer: C

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71. Which of the following noble gases is used in the treatment of cancer ?

A. Helium

B. Argon

C. Krypton

D. Radon.

Answer: D

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72. Noble gases are sparingly soluble in water due to

A. dipole-dipole interactions

B. dipole-induced dipole interaction

C. Induced dipole-induced dipole interaction

D. Hydrogen bonding.

Answer: B

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73. Xenon hexa fluoride reacts with potassium fluoride to yield

A. $[XeF_5]^+[KF_2]^-$

B. $K^+[XeF_7]^-$

C. XeF_4

D. $[XeF_4]^{2+}[KF_2]^{3-}$

Answer: B

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74. The noble gas which behaves abnormally in liquid state is

A. Ar

B. Xe

C. He

D. Kr.

Answer: C

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75. A fluoride of xenon on hydrolysis gives a compound which has trigonal pyramidal structure. The fluoride is

A. XeF_2

B. XeF_6

C. $XeOF_4$

D. $XeOF_2$.

Answer: B

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76. Which of the following does not react with fluorine ?

A. Kr

B. Xe

C. Ar

D. All of these.

Answer: C

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77. Which one of the following noble gases is not found in atmoshphere?

A. Ne

B. Rn

C. Ar

D. Kr.

Answer: B

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78. Noble gases are adsorbed by

A. Anhydrous calcium chloride

B. Ferric hydroxide

C. Conc. H_2SO_4

D. Activated coconut charcoal.

Answer: D

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79. XeF_4 on partial hydrolysis produces

A. XeF_2

B. $XeOF_2$

C. $XeOF_4$

D. XeO_3.

Answer: B

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80. Clathrates are the compounds obtained from noble gases and

A. Water

B. Quinol

C. Liquid ammonia

D. Both A and B.

Answer: D

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81. The compound that attacks pyrex glass is

A. XeF_2

B. XeF_4

C. XeF_6

D. All.

Answer: C

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82. In order to prevent the hot metal filament from getting burnt, when the electric current is switched on, the bulb is filled with

A. Cl_2

B. H_2

C. NH_3

D. An Inert gas.

Answer: D

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83. Helium is subjected to electrical discharge. The following species is not present in the discharge tube

A. He_2

B. He^+

C. $HeHe^+$

D. He^{2+}.

Answer: A

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84. Nuclear fusion produces

A. Argon

B. Deuterium

C. Krypton

D. Helium.

Answer: D

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85. Which of the following Xenon fluoride does not exist ?

A. XeF_2

B. XeF_4

C. XeF_6

D. XeF_8.

Answer: D

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86. The noble gas which form interstitial compound with metals is

A. Neon

B. Argon

C. Helium

D. Xenon.

Answer: C

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87. The atomicity of noble gases is

A. 4

B. 3

C. 1

D. 2

Answer: C

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88. In solid argon , the atoms are held together by

A. Ionic bonds

B. Hydrogen bonds

C. van der Waal's forces

D. Hydrophobic forces.

Answer: C

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89. Noble gases do not react with other elements because

A. they are monoatomic

B. they are not found in abundance

C. the size of the atom are very small

D. they have completely paired up and stable electron shells.

Answer: D

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90. Which of the following inert gases is least polarised ?

A. He

B. Ne

C. Kr

D. Xe.

Answer: A

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91. If helium is allowed to expand in vacuum, it liberates heat because

A. Helium is an ideal gas

B. Helium is an inert gas

C. The critical temperature of helium is very low

D. Helium has least boiling point of all the elements.

Answer: C

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92. Which of the following noble gas is not present in atmosphere ?

A. He

B. Ne

C. Ar

D. Rn.

Answer: D

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93. percentage of argon in air is about

A. 1%

B. 2%

C. 3%

D. 4%.

Answer: A

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94. Which one of the noble gases was observed in the solar spectrum ?

A. He

B. Ne

C. Ar

D. Kr.

Answer: A

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95. For the isolation of inert gases from air, the nitrogen and oxygen present are removed by nitrogen and oxygen present are removed by passing air over heated

A. Calcium carbide

B. Copper metal

C. Activated charcoal

D. Finely divided mixture of Pt and Pd.

Answer: A

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96. The noble gases found dissolved in some spring waters are

A. Argon and Helium

B. Xenon and Argon

C. krypton and xenon

D. xenon and radon.

Answer: A

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97. Radon is formed by emission of α-particles by

A. Radium

B. Polonium

C. Xenon

D. Lead.

Answer: A

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98. The state of hybridization of xenon in XeF_2 is

A. sp^2

B. sp^3d

C. sp^2

D. sp^3d^2.

Answer: B

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99. The study of spectrum of chromosphere of the sun by Janseen and Lockyer in 1868 lead to the discovery of

A. Xenon

B. Neon

C. Argon

D. Helium.

Answer: D

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100. Hybridization and shape of XeF_4 is

A. sp^3

B. sp^3d

C. sp^2

D. sp^3d^2.

Answer: D

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101. The noble gas which shows abnormal behaviour in liquid state and behaves as a super fluid is ____.

A. Argon

B. Neon

C. Helium

D. Xenon.

Answer: C

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102. Which of the following compounds is not known ?

A. KrF_2

B. XeF_4

C. XeF_6

D. ArF_2.

Answer: D

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103. XeF_2 reacts with SbF_5 to form

A. $[XeF]^+[SbF_6]^-$

B. $[XeF_3]^-[SbF_6]^-$

C. $Xe^-[PtF_6]^+$

D. XeF_4.

Answer: A

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104. In XeF_2, the three lone pairs occupy

A. Three equatorial position

B. Two axial and one equatorial position

C. Two equatorial and one axial position

D. Three axial positions.

Answer: A

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105. The state of hybridization of xenon of XeF_6 is

A. sp^3d

B. sp^3d^2

C. sp^3d^3

D. sp^3.

Answer: C

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106. Xenon best reacts with

A. most electropositive element

B. most electronegative element

C. hydrogen halides

D. alkali metals.

Answer: B

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107. The shape of XeF_4 molecule is

A. Planar triangular

B. Tetrahedral

C. Square pyramidal

D. Square planar.

Answer: D

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108. The forces of cohesion in liquid helium are

A. covalent

B. ionic

C. polar-polar

D. van der Waal's.

Answer: D

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109. Which of the following contains maximum number of pairs around Xe atom ?

A. XeF_4

B. XeF_6

C. $XeOF_2$

D. XeF_2.

Answer: D

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110. The extent of adsorption on coconut charcoal is maximum for the noble gas

A. He

B. Ne

C. Kr

D. Xe.

Answer: D

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111. The first noble gas compound prepared by Bartlett is

A. XeF_6

B. XeF_4

C. $Xe^+[PtF_6]^-$

D. XeO_3.

Answer: C

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112. XeF_6 on hydrolysis gives

A. XeO_4

B. $XeOF_2$

C. $XeOF_4$

D. XeO_3.

Answer: D

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113. Which of the following is an explosive compound ?

A. XeF_2

B. XeF_4

C. XeO_3

D. XeF_3.

Answer: C

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114. The major sources of noble gases are

A. Radioactive minerals

B. Sun's atmosphere

C. Atmosphere air

D. Mineral water.

Answer: C

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115. The oxidation state of Xe in XeF_6 is

A. 0

B. $+2$

C. $+6$

D. -6.

Answer: C

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116. The noble gases which do not form any clatherate

A. He

B. Ne

C. Kr

D. Xe.

Answer: A::B

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117. The only known true chemical compounds of noble gas are with

A. F

B. O

C. N

D. S.

Answer: A::B

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118. Xe shows oxidation states of

A. 2

B. 4

C. 6

D. 8

Answer: A::B::C::D

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119. Which of the following reacts with F_2 ?

A. Ne

B. Xe

C. Ar

D. Kr.

Answer: B::D

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120. Clathrates are obtained from noble gases and

A. water

B. p-Quinol

C. Ammonia

D. Phenol.

Answer: A::B::D

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121. The noble gases heavier than air are

A. Ar

B. He

C. Ne

D. Kr.

Answer: A::D

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122. Which of the following is used in flash tubes in photography ?

A. Ne

B. Kr

C. Ar

D. Xe.

Answer: B::D

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123. The noble gas which form interstitial compound with metals is

A. He

B. Ne

C. Kr

D. Xe.

Answer: A

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124. The noble gases found dissolved in spring water are

A. He

B. Ne

C. Xn

D. Kr.

Answer: A

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125. The only noble gas recovered from natural gas is

A. Kn

B. Rn

C. Ar

D. He.

Answer: D

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126. When radioactive minerals like cleveite, monozite and pitch blende are heated to 1273 K in vacuo, the noble gas obtained is

A. Rn

B. Kr

C. He

D. Ne.

Answer: C

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127. In ordinary incadescent and fluorscen lamps the gas filled along with nitrogen is

A. Ne

B. Ar

C. Kr

D. He.

Answer: B

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128. The noble gas commonly used to provide inert atmosphere in certain metallurgical processes is

A. He

B. Ne

C. Ar

D. Kr.

Answer: C

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129. The noble gas commonly used in cryogenic study is

A. He

B. Ne

C. Ar

D. Kr.

Answer: A

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130. Radon is produced by the radioactive decay of

A. Ra

B. U

C. Th

D. None of these.

Answer: A

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131. The molecular shapes of SF_4, CF_4 and XeF_4 are :

A. The same, with, 2, 0 and 1 lone pairs of electrons respectively

B. The same, with, 1, 1 and 1 lone pairs of electrons respectively

C. Different, with, 0, 1 and 2 lone pairs of electrons respectively

D. Different, with, 1, 0 and 2 lone pairs electrons respectively.

Answer: D

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132. Among the following molecules, $(i) XeO_3 (ii) XeOF_4 (iii) XeF_6$ those having same number of lone pairs on Xe are:

A. 1 and 2 only

B. 1 and 3 only

C. 2 and 3 only

D. 1, 2 and 3.

Answer: D

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133. In which of the following pairs, the two species are iso-structural ?

$(a) SO_4^{2-}$ and NO_3^- (b) BF_3 and NF_3

$(c) BrO_3^-$ and XeO_3 (d) SF_4 and XeF_4

A. BrO_3 and XeO_3

B. SF_4 and XeF_4

C. SO_3^2 and NO_3

D. BF_3 and NF_3.

Answer: A

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Rq

1. The last orbit of argon would have electrons

A. 8

B. 18

C. 2

D. 6

Answer: A

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2. Least chemical activity is shown by

A. NH_3

B. CH_4

C. Ar

D. H_2SO_4

Answer: C

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3. The electronic configuration of neon is

A. $1s^2$

B. $1s^2 2s^2 2p^3$

C. $1s^2 2s^2 2p^5$

D. $1s^2 2s^2 2p^2$.

Answer: C

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4. If two litres of aitr is passed repectedly over heated copper and heated mg till no further redcution in volume takes place, the volume finally obtained will be approroximately.

A. 800 mL

B. 200 mL

C. 10 mL

D. zero.

Answer: C

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5. Which of the following outer electronic configuration represents argon ?

A. ns^2

B. ns^2np^6

C. ns^2np^5

D. ns^2np^4.

Answer: B

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6. Which of the following is monoatomic?

A. Oxygen

B. Neon

C. Fluorine

D. Nitrogen.

Answer: B

Watch Video Solution

7. The noble gas which forms maximum number of compound is

A. Ne

B. Xe

C. Kr

D. Rn.

Answer: B

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8. Density of N_2 gas prepared from air is slightly higher than that of nitrogen prepared by chemical reaction from a compound of nitrogen because aerial nitrogen contains

A. Argon

B. CO_2

C. Some nitrogen molecules analogous to O_2

D. Greater amount of nitrogen molecules derived from N^{15} isotope.

Answer: A

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9. Noble gases do not react with other elements because

A. They are monoatomic

B. They are found in abundance

C. The size of their atoms is very small

D. they have completely paired up and stable electron shells.

Answer: D

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10. The spectrum of He is expected to be similar to that of

A. H

B. Li^+

C. Na

D. He^+.

Answer: B

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11. The atomic mass of noble gases is determined with the help of the following relationship

A. Atomic mass = Equivalent mass $\times$ valency

B. Atomic mass = Equivalent mass/valency

C. Atomic mass = $2 \times$ Vapour density = Molecular mass

D. Atomic mass = Valency/Equivalent mass.

Answer: C

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12. Which of the possible following florides of xenon is impossible ?

A. XeF_2

B. XeF_3

C. XeF_4

D. XeF_6.

Answer: B

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13. XeF_2 molecule is

A. Linear

B. Trigonal planar

C. Pyramidal

D. Square planar.

Answer: A

Watch Video Solution

14. Which one of the following configuration represents a noble gas ?

A. $1s^2 2s^2 2p^6 3s^2$

B. $1s^2 2s^2 2p^6 3s^1$

C. $1s^2 2s^2 2p^6$

D. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$.

Answer: C

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15. A clathrate may be defined as a

A. Cage compound

B. Liquid crystal

C. Mixture

D. Solid solution.

Answer: A

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16. Noble gases are

A. Monoatomic

B. Diatomic

C. Triatomic

D. Any of the above.

Answer: A

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17. The following has zero valency

A. Na

B. Be

C. Al

D. Kr.

Answer: D

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18. Which of the following statements is not true about noble gases ?

A. Their ionization energies are very high

B. Their electron affinities are nearly zero

C. They don't form any chemical compounds

D. They are not easily liquefied.

Answer: C

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19. Helium - oxygen mixture is used by deep sea divers in preference to nitrogen-oxygen mixture, because

A. helium is much less soluble in blood than nitrogen

B. nitrogen is much less soluble in blood than helium

C. Due to high pressure deep under sea nitrogen and oxygen react to give poisonous nitric oxide.

D. Nitrogen is highly soluble in water.

Answer: A

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20. What is the nature of the forces present in the noble gas atoms ?

A. van der Waal's forces

B. Ion-dipole forces

C. London dispersion forces

D. Magnetic forces.

Answer: A

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21. percentage of argon in air is about

A. 1%

B. 2%

C. 3%

D. 4% .

Answer: A

Watch Video Solution

22. The structure of XeF_6 is

A. Distorted octahedral

B. Pyramidal

C. Tetrahedral

D. None of the above.

Answer: A

Watch Video Solution

23. Which of the following statements about noble gases is false ?

A. They are used to provide inert atmosphere in many chemical reactions

B. They are only sparingly soluble in water

C. They form diatomic molecules

D. Some of them are used to fill discharge tubes used for advertising signs.

Answer: C

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24. Among noble gases, only xenon reacts with flourine to form stable xenon fluorides, because xenon

A. has the largest

B. has the lowest ionization enthalpy

C. has the highest heat of vapourization

D. is the most readily available noble gas.

Answer: B

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25. What is the oxidation number of Xe in $XeOF_2$?

A. 0

B. 2

C. 4

D. 3

Answer: C

Watch Video Solution

26. Argon was discovered by

A. Reyleigh

B. Frankland

C. Rutherford

D. None.

Answer: A

Watch Video Solution

27. The ionization potential for hydrogen atom is $13.6eV$, the ionization potential for He^+ is

A. 54.4 eV

B. 6.8 eV

C. 13.6 eV

D. 24.5 eV.

Answer: A

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28. Which of the following noble gas is not present in atmosphere ?

A. He

B. Ne

C. Ar

D. Rn.

Answer: D

Watch Video Solution

29. The noble gas was first time discovered by

A. Cavendish

B. William Ramsay

C. Lockyer

D. Frankland.

Answer: B

Watch Video Solution

30. Which of the following statements is not correct for a noble gas ?

A. Ar is used in electric bulbs.

B. Neon is obtained during radioactive disintegration.

C. Half life of Rn is only 3-8 days

D. He is used in producing very low temperature.

Answer: B

Watch Video Solution

31. In the following four elements, the ionization potential of which one is the highest ?

A. Oxygen

B. Argon

C. Barium

D. Caesium.

Answer: B

Watch Video Solution

32. The noble gas which was discovered first in the sun and then on the earth

A. Argon

B. Xenon

C. Neon

D. Helium.

Answer: D

Watch Video Solution

33. Which of the following statement is false ?

A. Radon is obtained from the decay of radium

B. Helium is an inert gas

C. Xenon is the most reactive among the rare gases

D. The most abundant rare gas found in the atmosphere is helium.

Answer: D

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34. Hybridization and shape of XeF_4 is

A. sp

B. sp^2

C. sp^2d

D. sp^3d^2.

Answer: D

Watch Video Solution

35. In the clathrates of xenon with water , the nature of bonding between xenon and water molecule is _____.

A. covalent

B. Hydrogen bonding

C. Co-ordinate

D. Dipole-induced hipole interaction.

Answer: D

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36. The last member of the family of inert gases is

A. Argon

B. Radon

C. Xenon

D. Neon.

Answer: B

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37. The coloured discharge tubes for advertisement mainly contains

A. Xenon

B. Helium

C. Neon

D. Argon.

Answer: C

Watch Video Solution

38. XeF_4 on partial hydrolysis produces

A. XeF_2

B. $XeOF_2$

C. $XeOF_4$

D. XeO_3.

Answer: B

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39. Which element out of the He, Ar, Kr and Xe forms least number of compounds ?

A. He

B. Ar

C. Kr

D. Xe.

Answer: A

Watch Video Solution

40. Which of the following is the correct sequence of the noble gases in their in the periodic table ?

A. Ar, He, Kr, Ne, Rn, Xe

B. He, Ar, Ne, Kr, Xe, Rn

C. He, Ne, Kr, Ar, Xe, Rn

D. He, Ne, Ar, Kr, Xe, Rn.

Answer: D

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41. Which of the following noble gases does not have an octer of electrons in its outermost shell ?

A. Neon

B. Radon

C. Argon

D. Helium.

Answer: D

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42. Number of unpaired electrons in inert gas is

A. Zero

B. 8

C. 4

D. 18

Answer: A

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43. The value of ionisation energy for inert gases is _____.

A. Zero

B. Low

C. High

D. Negative.

Answer: C

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44. The elements which occupy the peaks of ionization energy curve are

A. Na, K, Rb, Cs

B. Na, Mg, Cl, I

C. Cl, Br, I, F

D. He, Ne, Ar, Kr.

Answer: D

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45. Sea divers go deep in the sea water with a mixture of which of the following gases

A. O_2 and He

B. O_2 and Ar

C. O_2 and CO_2

D. CO_2 and Ar.

Answer: A

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46. Which of the following cannot be formed ?

A. He^{2+}

B. He^{+}

C. He

D. He_2.

Answer: D

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47. The element which has not yet been reacted with F_2 is

A. Ar

B. Xe

C. Kr

D. Rn.

Answer: A

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48. Gradual addition of electronic shells in the noble gases causes a decrease in their

A. Ionization energy

B. Atomic radius

C. Boiling point

D. Density.

Answer: A

Watch Video Solution

49. Which of the following noble gas is least polarisable ?

A. He

B. Xe

C. Ar

D. Ne.

Answer: A

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50. In which of the following groups, when He is placed, its all the properties are satisfied ?

A. With alkali gases

B. With halogens

C. With inert gases

D. None of these.

Answer: C

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51. Shape of $XeOF_4$ is

A. Octahedral

B. Square pyramidal

C. Pyramidal

D. T-shaped.

Answer: B

Watch Video Solution

52. The most abundant noble gas in the atmosphere is

A. He

B. Ne

C. Ar

D. Xe.

Answer: C

Watch Video Solution

53. The state of hybridization of xenon in XeF_2 is

A. sp^3

B. sp^2

C. sp^3d

D. sp^2d

Answer: C

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54. The lowest boiling point of helium is due to its

A. Inertness

B. Gaseous nature

C. High polarisability

D. Weak van der Waal's forces between atoms

Answer: D

Watch Video Solution

55. Which one of the following elements is most reactive ?

A. He

B. Ne

C. Ar

D. Xe.

Answer: D

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56. Which of the following is a planar molecule ?

A. XeO_4

B. XeF_4

C. $XeOF_4$

D. XeO_2F_2.

Answer: B

Watch Video Solution

57. Which of the noble gas has highest polarizability

A. He

B. Ar

C. Kr

D. Xe.

Answer: D

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58. Which of the following has SP^3 hybridization ?

A. XeO_3

B. BCl_3

C. XeF_4

D. BBr_3.

Answer: A

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59. Which of the following two are isostructural ?

A. XeF_2, IF_2

B. NH_3, BF_3

C. CO_3^2, SO_3^2

D. PCl_5, ICl_5.

Answer: A

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60. The number of lone pairs of electrons present on Xe in XeF_2 ?

A. 3

B. 4

C. 2

D. 1

Answer: A

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61. What is the atomic number (Z) of the noble gas that reacts with fluorine ?

A. 54

B. 10

C. 18

D. 2

Answer: A

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62. Match the following.

List-I	List-II
$(A) XeF_4$	(1) Distorted octahedral
$(B) XeF_6$	(2) Tetrahedral
$(C) XeO_3$	(3) Square planar
$(D) XeO_4$	(4) Pyramidal

A. a-4, b-1, c-3, d-2

B. a-2, b-3, c-1, d-4

C. a-1, b-4, c-2, d-3

D. a-3, b-1, c-4, d-2

Answer: D

Watch Video Solution

63. Hybridization and shape of XeF_4 is

A. sp^3d, trigonal bipyramidal

B. sp^3, tetrahedral

C. sp^3d^2, square planar

D. sp^3d^2, hexagonal.

Answer: C

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64. The gas mixture used to provide relief for the asthma patients in their respiratory problems is

A. Mixture of helium and oxygen

B. Mixture of neon and oxygen

C. Mixture of xenon and nitrogen

D. Mixture of argon and oxygen.

Answer: A

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65. In XeF_2, XeF_4 and XeF_6, the number of the lone pairs of Xe respectively are

A. 3, 2 and 1

B. 4, 3 and 2

C. 2, 3 and 1

D. 3, 2 and 0.

Answer: A

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66. Noble gases are group of elements which exhibit very :

A. High chemical activity

B. Low chemical activity

C. Minimum electronegativity

D. Much paramagnetic properties.

Answer: B

Watch Video Solution

67. The shape of XeF_4 molecule is

A. square planar

B. Tetrahedral

C. Octahedral

D. trigonal planar.

Answer: A

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68. What are the products formed in the reaction of xenon hexafluoride with silicon dioxide?

A. $XeSiO_4 + HF$

B. $XeF_2 + SiF_4$

C. $XeOF_4 + SiF_4$

D. $XeO_3 + SiF_2$.

Answer: C

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69. XeF_6 on complete hydrolysis gives

A. Xe

B. XeO_2

C. XeO_3

D. XeO_4.

Answer: C

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70. Which one of the following is a correct pair with respect to molecular formula of xenon compound and hybridisation state of xenon in it ?

A. XeF_4, sp^3

B. XeF_2, sp

C. XeF_2, sp^3d

D. XeF_4, sp^2.

Answer: C

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71. The correct order of solubility in water for $He, Ne, Ar, Kr, Xe,$ is

A. $He > Ne > Ar > Kr > Xe$

B. $Ne > Ar > Kr > He > Xe$

C. $Xe > Kr > Ar > Ne > He$

D. $Ar > Ne > He > KrXe.$

Answer: C

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72. Which noble gas is more soluble in water ?

A. He

B. Ar

C. Ne

D. Xe.

Answer: D

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73. Argon was discovered by

A. Rayleigh

B. Ramsay

C. Lockyr

D. None of these.

Answer: A

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74. The gaseous mixture used by deep sea divers for respiration is

A. $O_2 + He$

B. $O_2 + Xe$

C. $O_2 + Ar$

D. $O_2 + N_2$.

Answer: A

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75. Which one of the following statements regarding helium is incorrect?

A. It is used to fill gas balloons instead of hydrogen because it is lighter and non-inflammable

B. It is used in gas-cooled nuclear reactors

C. It is used to produce and sustain powerful superconducting magnets

D. It is used as a cryogenic agent for carrying out experiments at low temperatures.

Answer: A

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76. Which of the following is an inert gas?

A. H_2

B. O_2

C. N_2

D. argon.

Answer: D

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77. Which of the following is not correct ?

A. XeO_3 has four σ and four π-bonds

B. The hybridization of Xe in XeF_4 is sp^3d^2

C. Among the noble gases the occurrence (percent by weight) of argon is highest in air

D. Liquid helium is used in cryogenic liquids.

Answer: A

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78. The molecular shapes of SF_4, CF_4 and XeF_4 are :

A. the same with 2, 0 and 1 lone pairs of electrons on the central atoms respectively

B. the same with 1, 1 and 1 lone pair of electrons on the central atoms respectively

C. different with 0, 1 and 2 lone pairs of electrons on the central atoms respectively.

D. different with 1, 0 and 2 lone pairs of electrons on the central atoms respectively.

Answer: D

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79. Among the following molecules, $(i)XeO_3(ii)XeOF_4(iii)XeF_6$ those having same number of lone pairs on Xe are:

A. (i) and (ii) only

B. (i) and (iii) only

C. (ii) and (iii) only

D. (i), (ii) and (iii) only.

Answer: D

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80. Which inert gas has abnormal behaviour in liquefaction

A. Xe

B. He

C. Ar

D. Kr.

Answer: B

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81. The formation of $O_2^+[PtF_6]^-$ is the basis for the formation of xenon fluorides. This is because:

A. O_2 and Xe has comparable sizes

B. Both O_2 and Xe are gases

C. O_2 and Xe have comparable ionization energies

D. O_2 and Xe have comparable electronegativities.

Answer: C

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82. Hydrolysis of XeF_4 and CaNCN gives respectively :

A. XeO_3 and $CaCO_3$

B. XeO_2 and $CaCN_2$

C. $XeOF_3$ and $CaCN_2$

D. $XeOF_2$ and $CaCO_3$.

Answer: D

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83. Among the following , the pair in which the two species are not isostructural is

A. IO_3 and XeO_3

B. PF_6 and SF_6

C. BH_4 and NH_4

D. SiF_4 and SF_2.

Answer: D

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84. Which is the most easily liquifiable rare gas

A. Ar

B. Ne

C. Xe

D. Kr.

Answer: C

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85. Which one of the following reaction of xenon compounds is not Feasible?

A. $3XeF_4 + 6H_2O \rightarrow 2Xe + XeO_3 + 12HF + 1.5O_2$

B. $2XeF_2 + 2H_2O \rightarrow 2Xe + 4HF + O_2$

C. $XeF_6 + RbF \rightarrow Rb[XeF_7]$

D. $XeO_3 + 6HF \rightarrow XeF_6 + 3H_2O$

Answer: D

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86. Perxenate ion is

A. XeO_6^{4-}

B. $HXeO_4^-$

C. XeO_4^{2-}

D. XeO_4^- .

Answer: A

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87. Which of the following fluorides of Xe has zero dipole moment ?

A. XeF_2

B. XF_6

C. XeF_4

D. Both A & C.

Answer: D

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88. Which of the following contains maximum number of pairs around Xe atom ?

A. XeO_3

B. XeF_4

C. XeF_6

D. XeF_2.

Answer: D

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89. Which of the following noble gases is used in miner's cap lamp ?

A. Helium

B. Neon

C. Argon

D. Krypton.

Answer: D

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90. The structure of XeO_2F_2 is

A. Trigonal bipyramidal

B. square planar

C. Tetrahedral

D. Seesaw.

Answer: A

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91. Which of the following is used in flash tubes in photography ?

A. Ar

B. Ne

C. Kr

D. Xe

Answer: C::D

Watch Video Solution

92. Which of the followng noble gases has the highest positive electron gain enthalpy ?

A. Helium

B. Krypton

C. Argon

D. Neon.

Answer: D

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93. XeF_2 is iso-structural with

A. $SbCl_3$

B. $BaCl_2$

C. TeF_2

D. ICl_2^- .

Answer: D

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94. Low chemical reactivity of the noble gases can be attributed to their

A. being non-metals

B. having high ionization energy

C. being gases

D. found in nature in small amount.

Answer: D

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95. Argon is used

A. to obtain low temperature

B. be high temperature welding

C. in high temperature for treatment of cancer

D. in filling air ships.

Answer: B

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96. The molecular shapes of SF_4, CF_4 and XeF_4 are :

A. the same, with 1, 2 and 1

B. the same, with 1, 0 and 1

C. different, with 0, 1 and 2

D. different, with 1, 0 and 2

Answer: D

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Linked Comprehension Type Mcq

1. There are some deposits of nitrated and phosphates in the earth's crust. Nitrates are more soluble in water. Nitrates are difficult to reduce under laboratory conditions but microbes do it easily. Ammonia forms a large number of complexes with transition metal ions. Hybridisation easily explains the ease of sigma donation capability of NH_3 and PH_3. Phosphine is a flammable gas and is prepared from white phosphorous. Which of the following statement is correct ?

A. Phosphates have no biological significance in humans

B. Between nitrates and phosphates, phosphates are less abundant in earth's crust

C. Between nitrates and phosphates, nitrates are abundant in earth's crust

D. Oxidation of nitrates is possible in soil.

Answer: C

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2. There are some deposits of nitrates and phosphates. Nitrates are more soluble in water. Nitrates are difficult to reduce under the laboratory conditions but microbes do it easily. Ammonia forms large number of complexes with metals ions. Hybridization easily explains the ease of sigma donation capacity of NH_3 and PH_3. Phosphine is a flamable gas and is prepared from white phosphorus.

Among the following the correct statement is

A. Between NH_3 and PH_3, NH_3 is a better electron donor because the lone pair of electrons occupies spherical 's' orbital and is less directional.

B. Between NH_3 and PH_3, PH_3 is a better electron donor because the lone pair of electrons occupies sp^3 orbital and is more directional.

C. Between NH_3 and PH_3, NH_3 is a better electrons donor because the lone pair of electrons occupies sp^3 orbital and is more directional.

D. Between NH_3 and PH_3, NH_3 is a better electrons donor because the lone pair of electrons occupies spherical 's' orbital and is less directional.

Answer: C

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3. There are some deposits of nitrates and phosphates in the earth's crust. Nitrates are more soluble in water. Nitrates are difficult to reduce under laboratory conditions but microbes do it easily. Ammonia forms a large number of complexes with transition metal ions. Hybridisation easily explains the ease of sigma donation capability of NH_3 and PH_3. Phosphine is a flammable gas and is prepared from white phosphorous. White phosphorous on reaction with $NaOH$ gives PH_3 as one of the products. This is a.

A. dimerization reaction

B. disproportionation reaction

C. condensation reaction

D. precipitation reaction.

Answer: B

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4. The noble gases are chemically inert due to high ionization enthalpy, positive electron gains enthalpy and presence of completely filled orbitals. However, Xe forms a number of compounds such as $XePtF_6 XeF_2, XeF_4, XeF_6$ and a number of xenon oxides and oxy fluorides. Xenon fluorides react with fluoride ion acceptors such as PF_5, AsF_5, SbF_3 etc. to form cationic species but with fluoride ion donors such as alkali metal fluorides they forms anionic fluoroanions. They are also hydrolysed by water but their reactivity increases with oxidation state of Xe.

The shape and hybridisation of some Xenon oxygen fluorides are given. Select the wrong answer.

A. $XeOF_2$ - T shaped - sp^3d

B. $XeOF_4$ - Square pyramidal - sp^3d^2

C. XeO_2F_2 - Trigonal bipyramidal - sp^3d

D. XeO_3F_2 - Tetrahedral - sp^3.

Answer: D

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5. The noble gases are chemically inert due to high ionization enthalpy, positive electron gains enthalpy and presence of completely filled orbitals. However, Xe forms a number of compounds such as $XePtF_6 XeF_2, XeF_4, XeF_6$ and a number of xenon oxides and oxy fluorides. Xenon fluorides react with fluoride ion acceptors such as PF_5, AsF_5, SbF_3 etc. to form cationic species but with fluoride ion donors such as alkali metal fluorides they forms anionic fluoroanions. They are also hydrolysed by water but their reactivity increases with oxidation state of Xe.

The number of lone pairs and bond pairs of electrons around Xe in $XeOF_4$ respectively are

A. 0 and 5

B. 1 and 5

C. 1 and 4

D. 2 and 3.

Answer: B

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6. The noble gases are chemically inert due to high ionization enthalpy, positive electron gains enthalpy and presence of completely filled orbitals. However, Xe forms a number of compounds such as $XePtF_6 XeF_2$, XeF_4, XeF_6 and a number of xenon oxides and oxy fluorides. Xenon fluorides react with fluoride ion acceptors such as PF_5, AsF_5, SbF_3 etc. to form cationic species but with fluoride ion donors such as alkali metal fluorides they forms anionic fluoroanions. They are also hydrolysed by water but their reactivity increases with oxidation state of Xe.

Which of the following is not formed by Xe ?

A. XeF_5

B. XeF

C. XeF_3

D. All the three.

Answer: D

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7. The noble gases are chemically inert due to high ionization enthalpy, positive electron gains enthalpy and presence of completely filled orbitals. However, Xe forms a number of compounds such as $XePtF_6 XeF_2$, XeF_4, XeF_6 and a number of xenon oxides and oxy fluorides. Xenon fluorides react with fluoride ion acceptors such as PF_5, AsF_5, SbF_3 etc. to form cationic species but with fluoride ion donors such as alkali metal fluorides they forms anionic fluoroanions. They are also hydrolysed by water but their reactivity increases with oxidation state of Xe.

When XeF_4 is treated with water, it forms ?

A. only Xe

B. Both Xe and XeO_3

C. only XeO_3

D. Both XeO_3 and $XeOF_4$.

Answer: B

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8. The name 'silica' covers an entire group of minerals which have the general formula SiO_2 , most common of which is quartz. quartz is a frame work silicate with the SiO_4 tetrahedra arratnged in spirals . The spirals can turn in a clockwise or anti-clockwise direction - a feature that results in these being two mirror images optically active, varieties of quartz.

The following pictures represent various silicate anions.

Their formulae are respectively : `

(##KSV_INORG_CHM_P1_C07_E01_035_Q01.png" width="80%"> .

A. SiO_3^{2-} $Si_3O_7^{2-}$

B. SiO_4^{4-} $Si_3O_{10}^{8-}$

C. SiO_4^{2-} $Si_3O_9^{2-}$

D. SiO_3^{4-} $Si_3O_7^{8-}$

Answer: B

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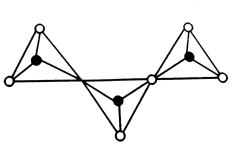
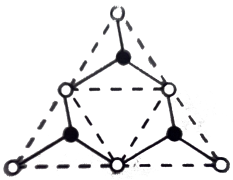
9. The name 'silica' covers an entire group of minerals which have the general formula SiO_2 , most common of which is quartz. quartz is a frame work silicate with SiO_4 tetrahedra arranged in spirals . The spirals can turn in a clockwise or anti-clockwise direction - a feature that results in these being two mirror images optically active, varieties of quartz. $Si_3O_9^{6-}$ (having three tetrahedra) is represented as :

A.



B.



C. Both

D. None.

Answer: B

Watch Video Solution

10. The name 'silica' covers an entire group of minerals which have the general formula SiO_2 , most common of which is quartz. quartz is a frame work silicate with the SiO_4 tetrahedra arratnged in spirals . The spirals can turn in a clockwise or anti-clockwise direction - a feature that results in these being two mirror images optically active, varieties of quartz..

The silicate anion in the mineral kinoite is a chain of three SiO_4^{-4} tetrahedra that share corners with the adjacent tetrahdra . The mineral also contains Ca^{2+} ions , Cu^{2+} ions and water molecules in $a1:1:1$ ratio . This mineral is represented as :

A. $CaCuSi_3O_{10}H_2O$

B. $CaCuSi_3O_{10}2H_2O$

C. $Ca_2Cu_2Si_32H_2O$

D. None of these.

Answer: C

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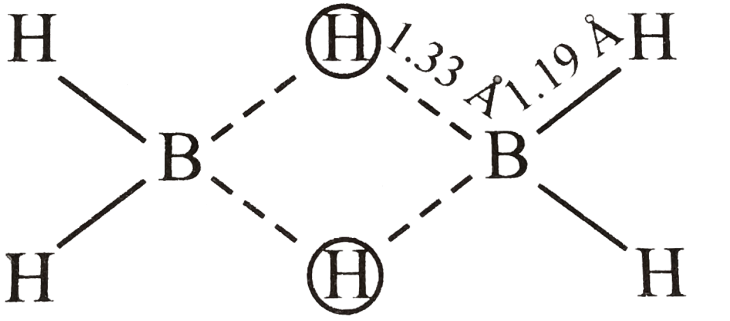
11. The molecular shapes of diborane is shown below :



Consider the following statements for diborane :

(i) Boron is approximately sp^3 hybridised.

(ii) $B-H-B$ angle is 180°

(iii) There are two terminal $B - H$ bonds for each boron atom.

(iv) There are only 12 bonding electrons available of These statements :

A. 1, 3 and 4 are correct

B. 1, 2 and 3 are correct

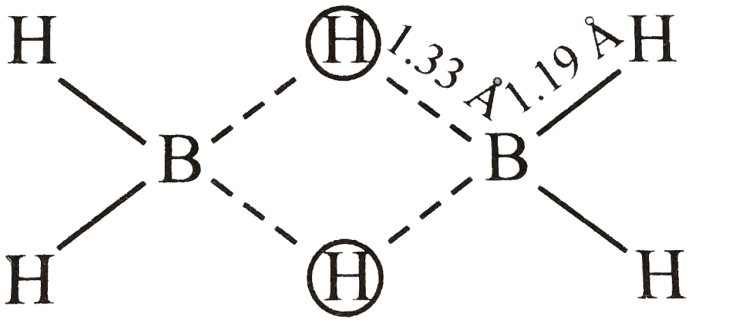
C. 2, 3 and 4 are correct

D. 1, 2 and 4 are correct.

Answer: A

Watch Video Solution

12. The molecular shapes of diborane is shown below :



Select correct statement about B_2H_6 :

A. Bridging group are electron deficient with 12 valence electrons

B. It has 2c-2e B-H bonds

C. It has 3c-2e B-H-B bonds

D. All the above and correct statements.

Answer: D

Watch Video Solution

13. The noble gases have closed-shell electronic cordigaration and are monatomic gases under normal condition .The low bolling points of the ligher noble gases aree due to the weak dispersion points of the ligher noble gases an due to the weak dispersion forces between the atoms and the alsence of other interalumic interactions.

The direct reaction of xenon with flarine loads to a series of compounds with water oxidation number $+2, -4$ and $+6, XeF_4$ reactsviolenatly with water to give XeO_2 .The compound of deduced axbibt nci strouchemistry and their goometries can be deduced considering the

total number of electron puirs in the valence shell.

Argon is used in arc welding because of its

A. low reactively with metal

B. ability to lower the melting point of metal

C. flamability

D. high calorific value.

Answer: A

Watch Video Solution

14. The noble gases have closed-shell electronic cordigaration and are monatomic gases under normal condition .The low bolling points of the ligher noble gases aree due to the weak dispersion points of the ligher noble gases an due to the weak dispersion forces between the atoms and the alsence of other interalumic interactions.

The direct reaction of xenon with flarine loads to a series of compounds with water oxidation number $+2, -4$ and $+6, XeF_4$ reactsviolenatly

with water to give XeO_2 .The compound of deduced axbibt nci strouchemistry and their goometries can be deduced considering the total number of electron puirs in the valence shell.

The structure of XeO_3 is

A. linear

B. planar

C. Pyramidal

D. T shaped.

Answer: C

Watch Video Solution

15. XeF_4 and XeF_6 are expected to be

A. oxidizing

B. reducing

C. interactive

D. strongly basic.

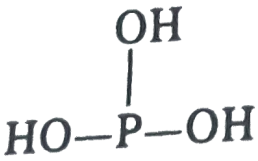
Answer: A

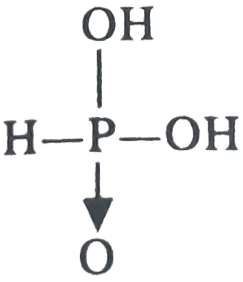
Watch Video Solution

16. An oxy acid of phosphorus has the following properties.

Complete neutralization of the acid with sodium hydroxide solution gives an aqueous solution of sodium ions and oxy acid anions in the ratio 2 : 1. When a solution of acid is warmed with silver nitrate solution metallic silver is deposited.

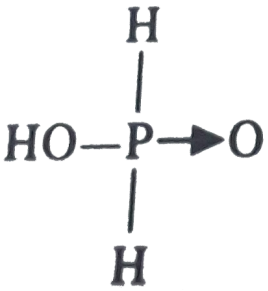
What is the structure of the oxy acid ?

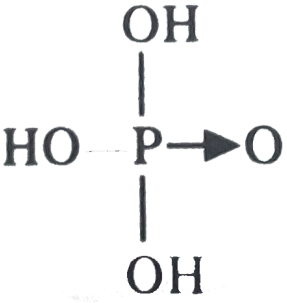




(II)

(I)





A. I

B. II

C. III

D. IV.

Answer: B

Watch Video Solution

17. An oxy acid of phosphorus has the following properties.

Complete neutralization of the acid with sodium hydroxide solution gives an aqueous solution of sodium ions and oxy acid anions in the ratio 2 : 1.

When a solution of acid is warmed with silver nitrate solution metallic silver is deposited.

The oxy acid is converted into - on reaction with acetic anhydride

A. $(CH_3CO)_2HPO_4$

B. $(CH_3CO)_2HPO_3$

C. P_2O_3

D. P_2O_5.

Answer: C

Watch Video Solution

18. An oxy acid of phosphorus has the following properties.

Complete neutralization of the acid with sodium hydroxide solution gives an aqueous solution of sodium ions and oxy acid anions in the ratio 2 : 1.

When a solution of acid is warmed with silver nitrate solution metallic silver is deposited.

pH of 0.01 M solution of the sodium salt of this acid formed (assume $pK_a = 2x$) is

A. $6 + 2x$

B. $6 - 2x$

C. $6 - x$

D. $6 + x$.

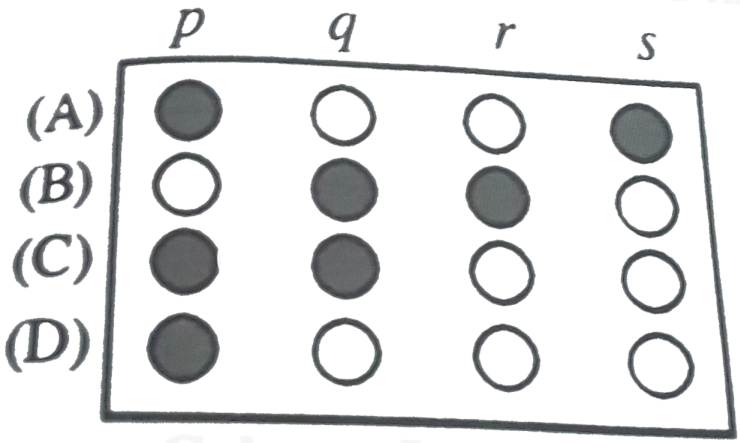
Answer: D

View Text Solution

Matrix Match Type

1. Here each question contains statements given in two column which have to be matched. Statements in columns I are labelled as A, B, C and D where as the statements in column II are labelled p, q, r and s. The answers to these questions are to be appropriately bubbled as illustrated in the following example.

If the correct matches should like the following.

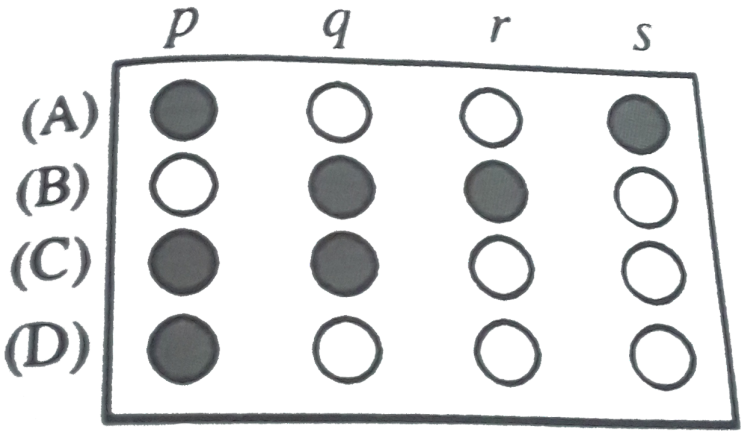


	Column I		Column II
(A)	NH_3	(p)	Basic
(B)	PH_3	(q)	sp^3 hybridized
(C)	H_2S	(r)	Acidic
(D)	H_2O	(s)	Hydrogen bonded

Watch Video Solution

2. Here each question contains statements given in two column which have to be matched. Statements in columns I are labelled as A, B, C and D where as the statements in column II are labelled p, q, r and s. The answers to these questions are to be appropriately bubbled as illustrated in the following example.

If the correct matches should like the following.



	Column I		Column II
(A)	SO_2	(p)	Basic
(B)	H_2SO_4	(q)	Acidic
(C)	HNO_3	(r)	Reducing
(D)	NH_3	(s)	Oxidizing

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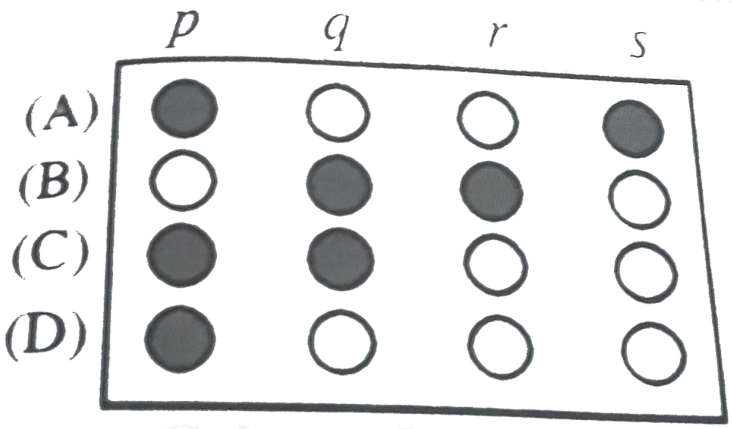
3. Here each question contains statements given in two column which have to be matched. Statements in columns I are labelled as A, B, C and D where as the statements in column II are labelled p, q, r and s. The answers to these questions are to be appropriately bubbled as illustrated in the following example.

If the correct matches should like the following.



Column I	Column II
(A) H_3PO_3	(p) more basic
(B) H_3PO_3	(q) reducing
(C) H_2SO_3	(r) dibasic
(D) H_3po_4	(S) reducing

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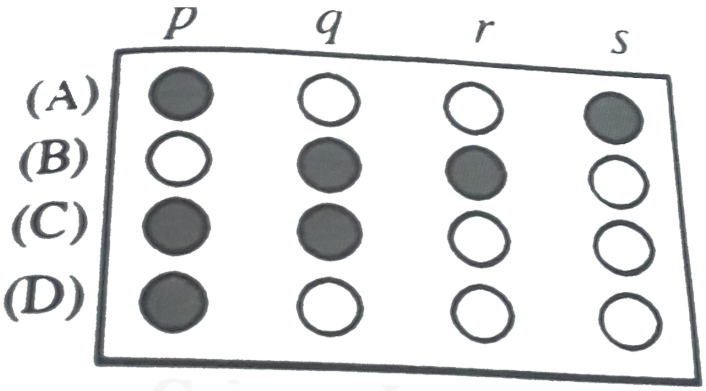
4. Here each question contains statements given in two column which have to be matched. Statements in columns I are labelled as A, B, C and D where as the statements in column II are labelled p, q, r and s. The answers to these questions are to be appropriately bubbled as illustrated in the following example.

If the correct matches should like the following.



Column I	Column
(A) $H_3PO_3 \xrightarrow{\Delta}$	(p) One
(B) $PCl_3 + h_2O \xrightarrow{\Delta}$	(q) One
(C) NO+H_(2)Oto,$(r)Dehydration),((D)HNO_3 + P_4O_{10} \rightarrow$	(s) in on

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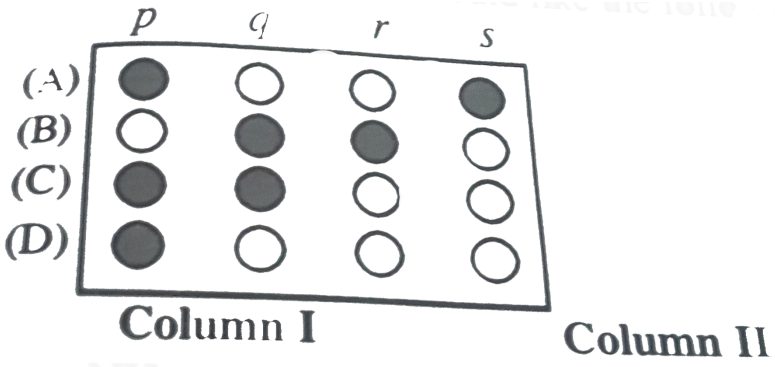
5. Here each question contains statements given in two column which have to be matched. Statements in columns I are labelled as A, B, C and D where as the statements in column II are labelled p, q, r and s. The answers to these questions are to be appropriately bubbled as illustrated in the following example.

If the correct matches should like the following.



Column I	Column II
(A) Hydrophosphorus acid	(p)+5
(B) Phosphoric acid	(q) tribasic
(C) Pyrophosphoric acid	(r)+1
(D) Metaphosphoric acid	(s) mono basic

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Assertion Reason

1. Assertion :Solubility of noble gases in water decreases with increases in atomic size

Reason :Solubility of noble gases in water is due to instantaneous dipole induced dipole interaction

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: D

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2. Assertion : Noble gases are chemically inert

Reason :All noble gases have ns^2np^6 valence shell electronic configuration

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: C

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3. Assertion : He and Ne do no form any clathrates

Reason : Both He and Ne are very small in size

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: A

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4. Statement I : Deep sea divers use $He - O_2$ mixture for breathing

Statement II : Unlike N_2, He is not soluble in blood even under high pressure.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: A

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5. Assertion : Ionisation enthalpy of noble gases is zero

Reason :Noble gases have fully field valance shell

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: D

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6. Assertion :Ne and Ar do not form any chemical compound

Reason :They have ns^2np^6 fully filled valence shell electronic configuration

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: B

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7. Assertion : XeF_4 is square planar

Reason :Xe atom in XeF_4 is dsp^2 hybridised

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: C

Watch Video Solution

8. Assertion : XeF_2 is linear

Reason :Xe atom in XeF_2 is sp hybridised

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: C

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9. Assertion: Helium and beryllium have similar outer electronic configuration of the type ns^2.

Reason: Both are chemically inert.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: C

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10. Assertion : Xenon form fluorides

Reason :Because $5d$ orbitals are available for valance shell expansion

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explanation A

C. A is true but R is false

D. A is false but R is true

Answer: A

Watch Video Solution

1. Percentage of argon in air is

A. nearly half as that of CO_2

B. nearly double as that of CO_2

C. nearly thirty times as that of CO_2

D. None of these.

Answer: C

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2. Noble gas which forms interstitial compounds with metals is

A. He

B. Ne

C. Kr

D. Xn.

Answer: A

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3. The xenon fluoride which acts as a fluoride ion acceptor with RbF is

A. XeF_2

B. XeF_4

C. XeF_6

D. Both (A) and (B).

Answer: C

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4. The shape of XeF_4 molecule is

A. tetrahedral

B. square planar

C. Square pyramidal

D. see-saw.

Answer: B

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5. Total number of electrons surrounding Kr in KrF_2 are

A. 2

B. 4

C. 8

D. 10

Answer: D

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6. Total number of electron pairs (both lone and bond pairs) around central atom of XeF_4 is

A. 4

B. 6

C. 5

D. 7

Answer: B

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7. Which of the following is compounds cannot be stored in glass vessels ?

A. XeF_6

B. XeF_4

C. XeF_6

D. XeO_3

Answer: C

Watch Video Solution

8. Which of the following gases is used in very low temperature thermometers ?

A. H_2

B. He

C. Ne`

D. N_2.

Answer: B

Watch Video Solution

9. _____is used as anaesthetic due to the formation of aqueous clathrates in physiologically strategic sports

A. Xe

B. Kr

C. Ar

D. He.

Answer: A

Watch Video Solution

10. When electric discharge is pressed through neon at low pressure, the colour of the glow is

A. red

B. green

C. yellow

D. orange

Answer: A

Watch Video Solution

Brain Teasers 19

1. which of the following is called Mephitic air by Rutherford ?

A. N_2

B. O_2

C. NH_3

D. H_2

Answer: A

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2. D_3 line observed in the yellow region of the sun's spectrum is due to

A. sodium

B. Neon

C. Krypton

D. Helium

Answer: D

Watch Video Solution

3. Swarts reagent is

A. $TiCl_4 + R_3Al$

B. SbF_3

C. FSO_3H

D. $H_2S_2O_8$

Answer: B

Watch Video Solution

4. Marsh test is for

A. Arsenic

B. Phosphorus

C. Sodium

D. Radium

Answer: A

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5. $KClO_3$ on warming with conc. HCl gives

A. Medicine

B. Bleaching agent

C. Washing agent

D. Desiccant

Answer: B

Watch Video Solution

6. $NO[SO_3H]$ is called

A. Fulminic acid

B. Prussic acid

C. Nordhasen's acid

D. Desiccant

Answer: C

Watch Video Solution

7. Hybridisation in I_3^- is

A. sp^3

B. sp^3d

C. sp^3d^2

D. dsp^2

Answer: B

Watch Video Solution

8. Urey and his co-workers evaporated liquid hydrogen near its triple point (13.9 K) under reduced pressure, when 4 litres of liquid hydrogen is reduced to only 1 ml which on spectroscopic study give fant lines in the spectrum. This is the due to

A. $._1^1H$

B. $._1^2H$

C. ${}_{1}^{3}H$

D. H_3

Answer: B

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9. Which of the following finds use as a superior thermometer liquid for high temperature measurement ?

A. Gallium

B. Thallium

C. Arsenic

D. Mercury

Answer: A

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10. Dehydration of malonic acid with P_2O_5 in vacuum at $140 - 150^\circ C$ give an evil-smelling gas which is

A. CH_3COOH

B. CO

C. CO_2

D. C_3O_2

Answer: D

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11. Which of the following acts as an acid in sulphuric acid ?

A. HNO_3

B. H_3PO_4

C. Water

D. $HClO_4$

Answer: D

Watch Video Solution

12. Bleaching powder slowly loses its activity when it stand in air. This is due to

A. Reaction with CO_2 to evolve Cl_2

B. Reaction with moisture to liberate O_2

C. Loss of $CaCl_2$

D. Formation of $Ca(OH)_2$

Answer: A

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13. If X is a member of chalcogen family, the chemical highest stability of X^{2-} is exhibited by

A. oxygen

B. selenium

C. tellurium

D. sulphur

Answer: C

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14. A degenerate gas is

A. He

B. He I

C. He II

D. $._2^3 He.$

Answer: C

View Text Solution

15. Liquid flow from a higher to a level .Which of the following liquids can climb up the wall of the glass vessel in which it is placed ?

A. Mercury

B. Liquid N_2

C. Liquid He

D. Water.

Answer: C

Watch Video Solution

16. Which among the following is solid or ordinary temperature ?

A. NO_2

B. CO_2

C. SO_2

D. SiO_2

Answer: D

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17. Which of the following represents Caro's acid ?

A. Peroxymonosulphuric acid

B. Thiosulphuric acid

C. Dithionic acid

D. Peroxydisulphuric acid.

Answer: A

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18. Aluminium appears like gold when it is mixed with

A. 80 % Co

B. 75 % Ni

C. 90 % Cu

D. 80 % Sn.

Answer: C

Watch Video Solution

19. Which of the following does not exist ?

A. PCl_5

B. PCl_3

C. $BiCl_3$

D. $BiCl_5$.

Answer: D

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20. Which of the following hydride is capable of showing conformations ?

A. CH_4

B. B_2H_6

C. $NH_2 - NH_2$

D. None of these.

Answer: C

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21. Which oxidation state is not shown by carbon in its compounds?

A. -4

B. $+4$

C. $+1$

D. 0

Answer: C

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22. On exposure to light, electrical conductivity of selenium

A. Decreases

B. Increases

C. Remains increases, then decreases

D. First increases, then decreases.

Answer: B

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23. Which are formed when an electric discharge is passed through helium, out of the following :

$He^{2+}, He^{+}, He^{2}\hat{}(+), He_2$

A. He^{+}, He_2

B. He_2, He^{2+}

C. He^{2+}, He^{+}, He^{2+}

D. None.

Answer: C

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24. _____is used as anaesthetic due to the formation of aqueous clathrates in physiologically strategic sports

A. Rn

B. Xe

C. CO_2

D. N_2O.

Answer: B

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25. An aluminium-silica clay called bentonite is dropped from aeroplanes in the slurry form for

A. Fertilizing the soil

B. Spreading pesticides

C. Spreading water over fires

D. Cooling the soil.

Answer: C

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26. Out of the following which will have highest tendency to form ionic compounds ?

A. Nitrogen

B. Antimony

C. Bismuth

D. Phosphorus.

Answer: C

Watch Video Solution

27. Which of the following gases is used in very low temperature thermometers ?

A. He

B. Ne

C. H_2

D. N_2.

Answer: A

Watch Video Solution

28. Which of the following is known as Javelle water ?

A. NaCl

B. $HClO_3$

C. $HClO_4$

D. NaOCl.

Answer: D

Watch Video Solution

29. Anhydrone, a drying agent is

A. $HClO_4$

B. Anhyd. Magnesium perchlorate

C. Anhyd. Calcium perchlorate

D. Potassium chlorate.

Answer: B

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30. Percentage of silver in silver paint is

A. 0.5

B. 0.25

C. 0.3177

D. 0

Answer: D

Watch Video Solution

31. The oxalate of which of the following elements is component of most kidney stones

A. Mg

B. Ca

C. Ba

D. Na.

Answer: B

Watch Video Solution

32. The carbide of which of the following metals on hydrolysis give Allylene

A. Be

B. Ca

C. Al

D. Mg.

Answer: D

Watch Video Solution

33. ..... Is called white graphite

A. Boron nitride

B. Borazine

C. Boric acid

D. Borazine.

Answer: A

Watch Video Solution

34. Halide of sulphur used in the vulcanisation of rubber is

A. SF_4

B. SF_6

C. S_2Cl_2

D. All the three.

Answer: C

Watch Video Solution

35. Which of the following is called Bertheiot's salt?

A. $(NaPO_3)_6$

B. NaOCl

C. $KClO_3$

D. KHF_2.

Answer: C

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36. P_4S_3 is isostructural and isosteric with

A. Bi_7^{3-}

B. P_7^{3-}

C. P_4O_6

D. P_2O_5.

Answer: B

Watch Video Solution

37. Witting reagent contains

A. Nitrogen

B. Phosphorus

C. Xenon

D. Sulphur.

Answer: B

Watch Video Solution

38. Gun shots are made of lead with a little of arsenic. The function of As is to increase

A. Range

B. Power

C. Brittleness

D. Strength.

Answer: C

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39. Which of the following elements from $p\pi - d\pi$ bonding in its oxides ?

A. Li

B. P

C. N

D. B.

Answer: B

Watch Video Solution

40. Brimstone is another name for:

A. Lapis Lazuli

B. Sodium

C. Phosphorus

D. Sulphur.

Answer: D

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Brain Teasers 20

1. Which of the following does not give borax bead test ?

A. Cobalt salt

B. Chromium salt

C. Iron salt

D. Zinc salt.

Answer: D

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2. Euchorine is

A. $Cl_2 + CO_2$

B. $ClO_2 + Cl_2$

C. $Cl_2O_3 + Cl_2$

D. Cl_2O_7.

Answer: B

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3. Oxidation of sulphur in Caro's acid is

A. $+6$

B. $+4$

C. $+8$

D. $+7$.

Answer: A

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4. Which of the following is not a bleaching agent ?

A. Cl_2 (moist)

B. Br_2

C. $CaOCl_2$

D. $NaClO$.

Answer: B

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5. Estimation of reducing substances by the use of standard I_2,

$I_2 + 2S_2O_3^{2-} \rightarrow S_4O_6^{2-} + 2I^{\Theta}$ is called

A. Iodimetry

B. Iodometry

C. Both A and B

D. None.

Answer: A

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6. Which of the following is called 'Super acid' ?

A. SbF_5

B. FSO_3H

C. HOCN

D. Both (A) and (B).

Answer: D

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7. Lapis-Lazuli' is a blue coloured precious stone. It is mineral of the class

A. Quartz

B. Sodium alumino silicate

C. Prussian blue

D. Basic copper carbonate.

Answer: D

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8. Mixture used in Holme's signal is

A. $CaC_2 + CaCl_2$

B. $CaCl_2 + Ca_3P_2$

C. $CaC_2 + Ca_3P_2$

D. $CaC_2 + Ca_3N_2$.

Answer: C

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9. Liquid ammonia and Liquor ammonia are

A. Same

B. Different

C. Allotropes

D. None.

Answer: B

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10. Ramsay and Gray named a noble gas as 'Nitron' which is now a days known as

A. Neon

B. Nitrogen

C. Argon

D. Radon.

Answer: D

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11. Helium is added to oxygen used by deep sea divers because :

A. It is less soluble in blood than nitrogen at high pressure

B. It is lighter than nitrogen

C. It is readily miscible with oxygen

D. It is less poisonous than nitrogen.

Answer: A

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12. Which of the following is used to stimulate the growth of plants ?

A. He

B. Ne

C. Ar

D. Rn.

Answer: B

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13. An azeotropic mixture of HCl and water has

A. 36 % HCl

B. 20.2 % HCl

C. 48 % HCl

D. 57 % HCl.

Answer: B

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14. Which gas is called super halogen?

A. F_2

B. Cl_2

C. Br_2

D. I_2.

Answer: A

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15. Crooke's glass cuts U.V. rays due to the presence of

A. CeO_2

B. K_2O

C. CaO

D. SiO_2.

Answer: A

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16. Boric acid can be successfully titrated against sodium hydroxide in the presence of

A. dil. HCl

B. glycerol

C. glycine

D. borax.

Answer: B

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17. How many sigma and pi bonds are present in borazole?

A. 12 σ and 12 π

B. 12σ and 3π

C. 6σ and 6π

D. None.

Answer: B

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18. Pick the odd one out

A. Borazine

B. Borazole

C. Borazon

D. Inorganic benzene.

Answer: C

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19. Saturated hydrides of silicon are called

A. Silicones

B. Silanes

C. Silicates

D. None.

Answer: B

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20. Which of the following is known as 'Aqua fortis ?

A. HCl

B. H_2SO_4

C. HNO_3

D. HNO_2.

Answer: C

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21. Hydrazine reduces Fehling solution to

A. CuO

B. Cu_2O

C. $Cu + O_2$

D. $Cu(OH)_2$.

Answer: B

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22. Sulphur heptoxide is an anhydride of

A. $H_2S_2O_8$

B. $H_2S_2O_7$

C. H_2SO_4

D. H_2SO_5.

Answer: A

View Text Solution

23. C_p / C_v ratio for noble gases is _____.

A. 1.33

B. 1.66

C. 2.13

D. 1.99.

Answer: B

Watch Video Solution

24. A gas which is used as anaesthetic in dental surgery is

A. NO

B. N_2O

C. NO_2

D. CO.

Answer: B

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25. A student is asked to draw the college building on a piece of glass. He would use :

A. Hydrochloric acid

B. Hydrofluoric acid

C. Hydrobromic acid

D. Hydroiodic acid.

Answer: B

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26. Which of the following trihalides is not hydrolysed

A. NF_3

B. PCl_3

C. $AsCl_3$

D. $SbCl_3$.

Answer: A

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27. Which of the following is a Pseudohalogen ?

A. C_2N_2

B. Cl_2

C. ICI

D. ClF_3.

Answer: A

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28. Which of the following interhalogen compound does not exist ?

A. CIF

B. FCl_3

C. ClF_3

D. BrF_5.

Answer: B

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29. The dielectric constant for H_2O at $18^\circ C$ is

A. 22

B. 82

C. 28

D. 88

Answer: B

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30. Hydrogen has three isotopes, the number of possible diatomic molecules will be

A. 3

B. 6

C. 9

D. 12

Answer: B

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31. Nuclear isomerism is exhibited by

A. Molecular hydrogen

B. All diatomic molecules

C. All diatomic molecules having even Z-values

D. All diatomic molecules having odd Z-values.

Answer: D

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32. Colloidal sulphur is obtained by the action of HNO on

A. H_2S

B. HgS

C. CaS_2O_3

D. CuS.

Answer: A

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33. Oxygen and hydrogen react to form water. Who made this discovery ?

A. Cavendish

B. Davy

C. Dumas

D. Rutherford.

Answer: A

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34. Hyzone is

A. H_2

B. H_3

C. $[H]$

D. Energetic H_2.

Answer: B

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35. The volumn strength of perhydrol is

A. 80

B. 90

C. 98

D. 100

Answer: D

Watch Video Solution

36. Semi water gas is

A. $CO + H_2$

B. $CO + N_2$

C. $CO + H_2 + N_2$

D. None.

Answer: C

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37. Which of the following does not exist

A. PCl_5

B. PF_5

C. PBr_5

D. PI_7.

Answer: D

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38. Which of the following contains odd electron bond ?

A. NO

B. NO_2

C. ClO_2

D. All.

Answer: D

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39. The noble gases which do not form any clatherate

A. He

B. Ar

C. Xe

D. Kr.

Answer: A

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40. Liquid oxygen is___ in colour.

A. Colourless

B. Pale yellow

C. Pale blue

D. Dark blue.

Answer: C

Watch Video Solution

Others

1. Which of the following compounds is/are not soluble in water?

A. $LiCO_3$

B. LiF

C. Li_3PO_4

D. All of these.

Answer: D

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2. Which of the following represents the correct order the basic strength ?

A. $LiOH > NaOH > KOH > PbOH$

B. $PbOH > NaOH > KOH > LiOH$

C. $PbOH > KOH > NaOH > LiOH$

D. $LiOH > PbOH > KOH > NaOH$.

Answer: C

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3. Which of the compound is stable to heat ?

A. Li_2CO_3

B. Mg_2CO_3

C. Both of these

D. None of these.

Answer: D

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4. Which of the following compounds has the highest melting point

A. LiCl

B. NaCl

C. KCl

D. SCl.

Answer: B

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5. What kind of metals can form superoxides?

A. Li

B. Na

C. Mg

D. K.

Answer: D

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6. Among the following the most stable hydride is

A. NaH

B. LiH

C. KH

D. RbH.

Answer: B

Watch Video Solution

7. Alkaline earth metal that resembles a aluminium more than its congeners is

A. Be

B. Mg

C. Ca

D. Sr.

Answer: A

Watch Video Solution

8. Which of the following metals has the highest melting point ?

A. Li

B. Be

C. Na

D. Mg.

Answer: B

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9. What is the correct order of thermal stability of carbonates of alkaline earth metals?

A. $MgCO_3 > CaCO_3 > SrCO_3 > BaCO_3$

B. $BaCO_3 > MgCO_3 > CaCO_3 > SrCO_3$

C. $BaCO_3 > SrCO_3 > CaCO_3 > MgCO_3$

D. $BaCO_3 > CaCO_3 > SrCO_3 > MgCO_3$.

Answer: C

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10. Which of the following is the strongest base ?

A. $Mg(OH)_2$

B. $NaOH$

C. $Ca(OH)_2$

D. KOH.

Answer: D

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11. Carbonates of alkaline earth metals dissolve in water in the presence of CO_2 because

A. of formation of bicarbonates

B. of formation of hydroxides

C. of formation of complex

D. acidic nature of CO_2 and basic nature of carbonates.

Answer: A

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12. Which of the following salt will give a green colour in fire works?

A. Calcium

B. Barium

C. Stronium

D. Potassium.

Answer: B

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13. Sapphire is a mineral of

A. Mg

B. Al

C. B

D. Au.

Answer: B

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14. Which of the following represents the correct order of first ionization energies ?

A. $Mg > Al > Na > B$

B. $B > Al > Mg > Na$

C. $B > Mg > Al > Na$

D. $Mg > B > al > Na.$

Answer: C

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15. Which of the following statements is not true about B_2H_6 ?

A. All the atoms in it lie in the same plane

B. It does not contain any B-B bond

C. It contains two types of B-H bonds

D. It contains two types of B-H bonds

Answer: A

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16. Aluminium becomes passive in :

A. Conc. HNO_3

B. $HClO_4$

C. Both of these

D. None of these.

Answer: C

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17. When Al is added to hot solution of KOH ?

A. Oxygen is evolved

B. Hydrogen is evolved

C. No reaction takes place

D. $Al(OH)_3$ is formed.

Answer: B

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18. Anhydrous $AlCl_3$ produces fumes in the air because of

A. Oxidation

B. Reduction

C. Hydrolysis

D. Hydration.

Answer: C

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19. The correct order of boiling points of noble gases is

A. $He < Ne < Ar < Kr < Xe$

B. $He < Ne < Ar < Kr < Xe$

C. $He < Ne < Kr < Ar < Xe$

D. $He < Ne < Ar < Xe < Kr.$

Answer: A

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20. Natural gas is the richest source of

A. Helium

B. Neon

C. Argon

D. Xenon.

Answer: A

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21. The most easily polarisable noble gas is

A. Krypton

B. Xenon

C. Helium

D. argon.

Answer: B

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22. $\underset{(2:1\text{ratio})}{Xe + F_2} \xrightarrow{Ni/675K} Z$

The compound Z in the above reaction is

A. XeF_4

B. XeF_4

C. XeO_3

D. XeO_4.

Answer: B

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23. XeF_6 on reaction with quartz gives

A. $XeOF_4$

B. XeF_4

C. XeO_3

D. XeO_4.

Answer: A

Watch Video Solution

24. Which of the following gases can be liquified most easily ?

A. He

B. Kr

C. Xe

D. Ne.

Answer: C

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25. The first compound of noble gases prepared in laboratory was

A. $XeOF_4$

B. XeF_2

C. $O_2^+[XeF_6]^-$

D. $Xe^+[PtF_6]^-$.

Answer: D

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26. In the reaction given below. What is correct about the missing substance

$HCN + NO_2 \rightarrow ?NO + H_2O$

A. It is pseudohalogen

B. It is hydrogen

C. It is chalcogen

D. It is methane.

Answer: A

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27. Which hydride is also called muriatic acid ?

A. H_2

B. HN_3

C. HCl

D. HNO_2.

Answer: C

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28. Which gas is called super halogen?

A. Fluorine

B. Chlorine

C. Iodine

D. Bromine.

Answer: A

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29. What is true about the oxoacids of halogens ?

A. All of them are good reducing agents

B. All of them are monobasic

C. They may be monobasic as well as polybasic

D. They have general formula HXO.

Answer: B

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30. During etching of glass by hydrofloric acid, which chemical compound is formed ?

A. H_2SiF_6

B. H_2SiO_6

C. H_2F_2

D. F_2O.

Answer: A

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31. Which halogen forms interhalogen compound but does not form polyhalide ion ?

A. Fluorine

B. Bromine

C. Iodine

D. All of these.

Answer: A

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32. Which of the following pair of acids are called super acids ?

A. $HClO_4H_2SO_4$

B. SbF_5 and $HClO_4$

C. FSO_3H and $ClSO_3H$

D. FSO_3H and SbF_5

Answer: D

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33. Which of the following does not contain iodine ?

A. Tincture iodine

B. Caliche

C. Sea weeds

D. Carballite.

Answer: D

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34. Which among the following is solid or ordinary temperature ?

A. SiO_2

B. CO_2

C. NO_2

D. SO_2.

Answer: A

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35. Which of the following is know as anhydron ?

A. Anhydrous $CaSO_4$

B. Anhydrous $Mg(ClO_4)_2$.

C. Anhydrous KHF_2

D. Anhydrous $CuSO_4$.

Answer: B

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36. Which halide of sulphur is used in valcanization of rubber ?

A. SF_4

B. S_2Cl_2

C. SF_6

D. All of these.

Answer: B

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37. XeF_6 on complete hydrolysis gives

A. $XeOF_4$

B. XeO_2F_2

C. XeO_3

D. None of these.

Answer: C

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38. C_p / C_v ratio of Ne is :

A. Close to that of Cl_2

B. Close to that of F_2

C. 1.66

D. Close to that of N_2.

Answer: C

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39. Which of the following pair contains one of more coloured substance but the products of their chemical reaction are colourless ?

A. O_2, NO_2

B. O_2, NO

C. I_2, starch

D. I_2, $Na_2S_2O_3$.

Answer: D

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40. How many O-H bonds are present in H_2SO_4 molecule ?

A. Two

B. Three

C. One

D. Four.

Answer: A

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41. Which hydride of chalcogens is non-volatile, non-poisonous and odourless ?

A. H_2Te

B. H_2S

C. H_2O

D. H_2O_2.

Answer: C

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42. Brimstone is another name for:

A. Carnallite

B. Bromocarnallite

C. Sulphur

D. Phosphate rocks.

Answer: C

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43. In P_4O_{10} the number of oxygen atoms bonded to each phosphorus atom is.....

A. 2

B. 3

C. 1

D. 4

Answer: D

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44. Which of the following is called peral white ?

A. $BiOCl$

B. $SbOCl$

C. $(NH_4)_2CO_3$

D. $CaOCl_2$.

Answer: A

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45. Which of the following oxoacid of nitrogen smells like that of leaching powder ?

A. NHO_3

B. NHO_2

C. HNO_4

D. None of these.

Answer: C

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46. What type of orbitals are used by nitrogen in forming NCl_3 ?

A. 2p-orbitals

B. sp^2 hybrid orbitals

C. sp^3-hybrid

D. sp-hybrid.

Answer: C

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47. The compound is covalent in gaseous state but ionic in solid state is.

A. PCl_5

B. CO_2

C. H_2S

D. SO_3.

Answer: A

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48. Bucky bale is the name associated with

A. C 60

B. Si 30

C. S 8

D. C 80.

Answer: D

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