The valency is zero for..

18TH GROUP ELEMENTS

Continued from 17th November..

STATEMENT TYPE QUESTIONS

1) Both 'I' and 'II' are true. 'II' is correct explanation of 'I'.
2) Both 'I' and 'II' are true. 'II' is not correct explanation of 'I'.
3) 'I' is true but 'II' is false
4) 'I' is false but 'II' is true.

29. Statement I :Balloons made by nylon films are better for containing helium than the conventional rubber balloons.
Statement II : R.M.S. velocity of helium is very high. So helium atoms can effuse out through rubber balloons.

30. Statement I : Compared to other noble gases 'Xe' is chemically active.
Statement II :'Xe' has low IP value and vacant 'd' orbitals, available for the excitation of electrons from 'p' orbitals of valence shell.

31. Statement I:Noble gases have highest ionization energies in their respective periods.
Statement II : The outermost shell of noble gases is completely filled.

32. 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.

33. Statement - I:Solubility of noble gases in water decreases with increase in atomic size.
Statement - II:Solubility is due to dipole-induced dipole interaction.

34. Statement - I:He -II has high viscosity and flows downward.
Statement - II:Liquid helium is used as cryogenic liquid.

35. Statement - I: In sea diver gases, the nitrogen of normal air is replaced by helium.
Statement - II: Nitrogen becomes more soluble in the body fluids at high pressures and causes conditions similar to alcohol intoxication.

36. Statement - I:Xenon forms fluorides.
Statement - II:Because 5d orbitals are available for valence shell expansion.

37. 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	B	C	D		A	B	C	D
1.	1	2	3	4	2.	3	1	4	2
3.	1	3	2	4	4.	2	4	1	3

38. Matrix Matching.

List-I	List-II
A) Gas Thermometers	p) *He*
B) Beacon lamp	q) *Ne*
C) Electric bulbs	r) Xe
D) Flash bulb	s) *Kr*

LEVEL-I A KEY

29) 2 30) 1 31) 1 32) 1 33) 4 34) 4 35) 4
36) 1 37) 2 38) A→p, B→q, C→q,s, D→r

LEVEL-I A HINTS

29. Due to non-inflammable and high R.M.S. velocity, 'He' is filled in balloons.
30. 'Xe' has low I.P. value and vacant 'd' orbitals. It can involve in chemical reactions.
31. In the noble gases, outermost shell is completely filled so that their I.P. values are high.
32. Unlike N_2, He is not soluble in blood at high pressure so that He+O_2 mixture is used for breathing.
33. Solubility of noble gases is due to dipole-induced dipole interaction and the solubility in water increases with atomic number.
34. Liquid 'He' is used as cyrogenic liquid and He-II has high viscosity and flows upward.
35. In sea diver gases at high pressure N_2 is more soluble in body fluids.
36. Xenon forms fluorides because '5d' orbitals are available for valency shell expansion.

LEVEL I B

1. The valency is zero for
1. Neon 2. Fluorine 3. Oxygen 4. Carbon

2. Oxidation state of zero group elements is
1. -1 2. +1 3. 0 4. -2

3. The atomicity of neon gas is
1. Two 2. One 3. Four 4. Three

4. Which of the following gaseous molecules is monoatomic?
1. Chlorine 2. Helium 3. Oxygen 4. Nitrogen.

5. The number of electrons in the penultimate orbit of krypton atom are
1. 8 2. 2 3. 18 4. 32

6. Which one of the following noble gases is not found in atmosphere ?
1. Rn 2. Kr 3. Ne 4. Ar

7. The first noble gas compound prepared by Bartlett is
1. XeF_2 2. KrF_2 3. $XePtF_6$ 4. XeO_3

8. Number of unpaired electrons in inert gas is
1) Zero 2) 8 3) 4 4) 18

9. Helium is subjected to electrical discharge. The following species is not present in the discharge tube
1. He^+ 2. He_2^+ 3. He_2 4. He

10. The spectrum of helium is expected to be similar to that of
1. H 2. Be 3. Li^+ 4. Ne

11. The gas that gives superfluid on cooling at 2.2K is
1. Ar 2. Rn 3. Kr 4. He

12. Viscosity is very low for
1. Ar 2. He(I) 3. He(II) 4. Kr

13. Which of the following statement is not correct for a noble gas?
1. Argon is used to fill the incandescent bulbs
2. Krypton is obtained in nuclear fission.
3. Radon is present in the atmosphere
4. Xenon cannot form XeF_3

14. Inversion temperature of helium is very low. So when helium is allowed to expand into vacuum it gets
1. Cooled 2. Heated
3. Neither cooled, nor heated 4. Liquified

15. Which of the following is a product in the explosion of hydrogen bomb?
1. Kr 2. Ne 3.He 4. Xe

16. The lightest gas which is non-inflammable is
1) H_2 2) He 3) N_2 4) Ar

17. Which of the following compound cannot be prepared?
1. XeF_2 2. XeF_3 3. XeF_4 4. XeF_6

18. The shape of XeO_3 molecule is
1. planar triangle 2. pyramid
3. linear 4. square planar

19. XeF_2 molecule is
1) Trigonal planar 2) Square planar
3) Linear 4) Pyramidal

20. If N_2 gas is dissolved in the blood, it causes
1. Blindness 2. Headache
3. Bends 4. All

21. Sea divers go deep in the sea water with a mixture of which of the following gases
1) O_2 and He 2) O_2 and Ar
3) O_2 and CO_2 4) CO_2 and Ar

22. The mixture of gases used for respiration by Asthma patients is
1) O_2 and H_2 2) O_2 and He
3) O_2 and Ar 4) O_2 and Ne

23. Shape of $XeOF_4$ is
1) Octahedral 2)Square pyramidal
3) Pyramidal 4) T-Shaped

24. Hybridization and shape of XeF_4 is
1) sp^3d, trigonal bipyramidal
2) sp^3, tetrahedral
3) sp^3d^2, square planar 4) sp^3d^2, hexagonal

25. Which of the following is formed by xenon?
1) XeF_7 2) XeF_4 3) XeF_5 4) XeF_3

26. The structure of XeO_2F_2 is
1) Square pyramidal
2) Trigonal pyramidal (see-sea)
3) Octahedral 4) Tetrahedral

LEVEL-I B KEY

1)1 2)3 3)2 4)2 5)3 6)1 7)3 8)1
9)3 10)3 11)4 12)3 13)3 14)2 15)3 16)2
17)2 18)2 19)3 20)3 21)1 22)2 23)2 24) 3
25)2 26)2

LEVEL II A PROPERTIES

1. Oxidation state of Xe in $Ba_2[XeO_6]$ is
1) 4 2) 6 3) 7 4) 8

2. The elements which occupy the peaks of ionization energy curve are
1) Na,K,Rb,Cs 2) Na,Mg,Cl,I
3) Cl,Br,I,F 4) He,Ne,Ar,Kr

3. The lowest boiling point of helium is due to its
1) inertness 2) Gaseous nature
3) High polarisability
4) Weak van der Waals forces between atoms

4. Noble gases are group of elements which exhibit very:
1) High chemical activity
2) Much paramagnetic proeprties
3) Maximum electronegativity
4) Low chemical activity

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5. XeF_6 on complete hydrolysis gives.
1) Xe 2) XeO_2 3) XeO_3 4) XeO_4

6. First stable compound of inert gas was prepared by
1) Rayleigh and Ramsay 2) Bartlett
3) Frankland and Lockyer 4) Cavendish

7. The element which has not yet been reacted with F_2 is
1) Ar 2) Xe 3) Kr 4) Rn

8. Which has the same electronic configuration as of inert gas
1) Ag^{3+} 2) Cu^{2+} 3) Pb^{4+} 4) Ti^{4+}

9. The correct order of enthalpy of vaporisation of noble gases is
1) Xe > Kr > Ar > Ne > He
2) Xe > Ar > He > Ne > Kr
3) He > Ne > Kr > Ar > Xe
4) Ne > Xe > Kr > He > Ar

10. Which of the following exhibits the weakest intermolecular forces?
1) H_2O 2) NH_3 3) He 4) HCl

11. Which of the following noble gas is the most polarized?
1) Radon 2) Krypton 3) Xenon 4) Helium

12. Which of the following noble gas is the least polarized?
1) Radon 2) Krypton 3) Xenon 4) Helium

13. The reaction of Xe with an excess of F_2 at high pressure and 573 K yields
1) XeF_2 2) XeF_4 3) XeF_6 4) XeF_8

STRUCTURE & USES

14. The shape of XeF_5^- Ion is
1) Pentagonal 2) Octahedral
3) Square pyramidal 4)Trigonal bipyramidal

15. The number of $P\pi - d\pi$ 'pi' bonds present in XeO_3 and XeO_4 molecules respectively [EAM-2009]
1) 3,4 2) 4,2 3) 2,3 4) 3,2

16. The fluoride of Xenon with zero dipole moment is
1) XeF_6 2) XeO_3 3) XeF_4 4) XeO_2F_2

17. XeO_6^{-4} contains
1) Eight bond pairs and no lone pairs at Xe
2) Three bond pairs and three lone pairs at Xe
3) Two bond pairs and six lone pairs at Xe
4) Four bond pairs and four lone pairs at Xe

18. How many lone pairs are associated with xenon in xenon difluoride?
1) 1 2) 2 3) 3 4) 4

19. XeO_3 has
1) Three double bonded O-atoms
2) Trigonal pyramidal geometry
3) One lone pair and sp^3 hybridisation
4) All of these

LEVEL-II A KEY

1) 4 2) 4 3) 4 4) 4 5) 3 6) 2 7) 1
8) 4 9) 1 10) 3 11) 3 12) 4 13) 3 14) 3
15) 1 16) 3 17) 1 18) 3 19) 4

LEVEL II B

1. 1/125th part of nitorgen gas isolated from atm osphere did not combine with any other sub stance due to
1) The chemical inert ness of N_2 gas
2) The presence of Argon
3) The presence of Argon & other noble gases
4) The presence of O_2.

2. In solid state Ar atoms are held together by
1) Ionic bonds 2) Covalent bonds
3) Hydrogen bonds 4) Vanderwaal forces

3. Liquid Helium at 2.2K and at 1atm pressure flows in the upward direction. It is because of its low
1) boiling point 2) heat of vapourisation
3) viscosity 4) surface tension

4. The noble gas which does not form any clathrates is
1) He 2) Ar 3) Kr 4) Xe.

5. Which of the following fluorides of xenon is impossible?
1) XeF_2 2) XeF_3 3) XeF_4 4) XeF_6

6. Which of the following fluorides of Xe has zero dipole moment?
1) XeF_2 2) XeF_6 3) XeF_4 4) Both (1) & (3)

7. Which of the following is formed when O_2F_2 reacts with Xe?
1) XeF_2 2) XeF_4 3) XeF_6 4) None of these

8. Which of the following noble gases can be called the hidden one?
1) Xe 2) He 3) Ar 4) Kr

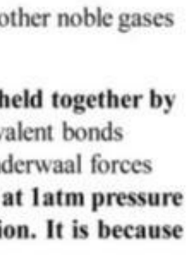
9. Helium mixed with oxygen is used in the treatment of
1) Beri beri 2) Burning feet
3) Joints burning 4) Asthma

10. The compound in which the number of $d\pi - p\pi$ bonds are equal to those present in ClO_4^-
1) XeF_4 2) XeO_3 3) XeO_4 4) XeF_6

LEVEL-II B KEY

1) 3 2) 4 3) 3 4) 1 5) 2 6) 4 7) 1
8) 4 9) 4 10) 2

Dr. Krupakar Pendli
Centre Head
Urbane junior colleges
7893774888



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For Feedback...
vijetha.nt@gmail.com