AIPMT 2006

1. Which of the following is the most basic oxide?

(1) SeO_2 (2) Al_2O_3

(3) $Sb2O_3$ (4) Bi_2O_3

AIPMT 2007

2. Identify the correct order of the size of the following

(1) $Ca^{2+} < K^+ < Ar < Cl^- < S^{2-}$

(2) $Ar < Ca^{2+} < K^+ < Cl^- < S^{2-}$

(3) $Ca^{2+} < Ar < K^+ < Cl^- < S^{2-}$

(4) $Ca^{2+} < K^+ < Ar < S^{2-} < Cl^-$

AIPMT 2008

3. The correct order of decreasing second ionisation enthalpy of Ti(22), V(23), Cr(24) and Mn(25) is :

(1) Mn > Cr > Ti > V

(2) Ti > V > Cr > Mn

(3) Cr > Mn > V > Ti

(4) V > Mn > Cr > Ti

AIPMT 2009

4. Which of the following oxides is not expected to react with sodium hydroxide ?

(1) BeO (2) B_2O_3

(3) CaO (4) SiO_2

5. Amongst the elements with following electronic configurations, which one of them may have the highest ionization energy ?

(1) $[Ne]3s^23p^1$ (2) $[Ne]3s^23p^3$

(3) $[Ne]3s^23p^2$ (4) $[Ar]3d^{10}4s^24p^3$

AIPMT 2010

6. Among the elements Ca, Mg, P and Cl, the order of increasing atomic radii is :-

(1) Cl < P < Mg < Ca

(2) P < Cl < Ca < Mg

(3) Ca < Mg < P < Cl

(4) Mg < Ca < Cl < P

7. The correct order of the decreasing ionic radii among the following isoelectronic species is :-

(1) $K^+ > Ca^{2+} > Cl^- > S^{2-}$

(2) $Ca^{2+} > K^+ > S^{2-} > Cl^-$

(3) $Cl^- > S^{2-} > Ca^{2+} > K^+$

(4) $S^{2-} > Cl^- > K^+ > Ca^{2+}$

8. Which of the following represents the correct order of increasing electron gain enthalpy with negative sign for the elements O, S, F and Cl ?

(1) S < O < Cl < F

(2) Cl < F < O < S

(3) O < S < F < Cl

(4) F < S < O < Cl

AIPMT Mains-2011

9. What is the value of electron gain enthalpy of Na^+ if IE_1 of Na = 5.1 eV :-

(1) +0.2 eV (2) –5.1 eV

(3) –10.2 eV (4) +2.55 eV

AIPMT Pre.-2012

10. Identify the **wrong** statement in the following:

(1) Atomic radius of the elements increases as one moves down the first group of the periodic table

(2) Atomic radius of the elements decreases as one-moves from left to right in the 2nd period of the periodic table

(3) Amongst isoelectronic species, smaller the positive charge on the cation, smaller is the ionic radius

(4) Amongst isoelectronic species, greater the negative charge on the anion, larger is the ionic radius

AIPMT 2014

11. Which of the following orders of ionic radii is correctly represented ?

(1) $H^- > H^+ > H$

(2) $Na^+ < F^- < O^{2-}$

(3) $F^- > O^{2-} > Na^+$

(4) $Al^{3+} > Mg^{2+} > N^{3-}$

12. Be^{2+} is isoelectronic with which of the following ions?
(1) H^+ (2) Li^+
(3) Na^+ (4) Mg^{2+}

13. Acidity of diprotic acids in aqueous solutions increases in the order :-
(1) $H_2S < H_2Se < H_2Te$
(2) $H_2Se < H_2S < H_2Te$
(3) $H_2Te < H_2S < H_2Se$
(4) $H_2Se < H_2Te < H_2S$

14. Reason of lanthanoid contraction is :-
(1) Negligible screening effect of 'f' orbitals
(2) Increasing nuclear charge
(3) Decreasing nuclear charge
(4) Decreasing screening effect

AIPMT 2015

15. The species Ar, K^+ and Ca^{2+} contain the same number of electrons. In which order do their radii increase ?
(1) $Ca^{2+} < Ar < K^+$
(2) $Ca^{2+} < K^+ < Ar$
(3) $K^+ < Ar < Ca^{2+}$
(4) $Ar < K^+ < Ca^{2+}$

16. The number of d-electrons in Fe^{2+} (Z = 26) is not equal to the number of electrons in which one of the following?
(1) p-electrons in Cl (Z = 17)
(2) d-electrons in Fe (Z = 26)
(3) p-electrons in Ne (Z = 10)
(4) s-electrons in Mg (Z = 12)

17. Because of lanthanoid contraction, which of the following pairs of elements have nearly same atomic radii ? (Numbers in the brackets are atomic numbers).
(1) Zr (40) and Nb (41)
(2) Zr (40) and Hf (72)
(3) Zr (40) and Ta (73)
(4) Ti (22) and Zr (40)

Re-AIPMT 2015

18. The formation of the oxide ion, O^{2-} (g), from oxygen atom requires first an exothermic and then an endothermic step as shown below :

$O(g) + e^- \rightarrow O^-(g)$; $\Delta_f H^\ominus = -141$ kJ mol^{-1}

$O^-(g) + e^- \rightarrow O^{2-}(g)$; $\Delta_f H^\ominus = +780$ kJ mol^{-1}

Thus process of formation of O^{2-} in gas phase is unfavourable even thought O^{2-} is isoelectronic with neon. It is due to the fact that,
(1) Oxygen is more electronegative
(2) Addition of electron in oxygen results in larger size of the ion
(3) Electron repulsion outweighs the stability gained by achieving noble gas configuration
(4) O^- ion has comparatively smaller size than oxygen atom

19. Which is the correct order of increasing energy of the listed orbitals in the atom of titanium ? (At. no. Z = 22)
(1) 3s 3p 3d 4s (2) 3s 3p 4s 3d
(3) 3s 4s 3p 3d (4) 4s 3s 3p 3d

NEET-I 2016

20. In which of the following options the order of arrangement does not agree with the variation of property indicated against it ?
(1) $Al^{3+} < Mg^{2+} < Na^+ < F^-$ (increasing ionic size)
(2) B < C < N < O (increasing first ionisation enthalpy)
(3) I < Br < Cl < F (increasing electron gain enthalpy)
(4) Li < Na < K < Rb (increasing metallic radius)

NEET(UG) 2017

21. The element Z = 114 has been discovered recently. It will belong to which of the following family/group and electronic configuration ?
(1) Carbon family, [Rn] $5f^{14}\ 6d^{10}\ 7s^2\ 7p^2$
(2) Oxygen family, [Rn] $5f^{14}\ 6d^{10}\ 7s^2\ 7p^4$
(3) Nitrogen family, [Rn] $5f^{14}\ 6d^{10}\ 7s^2\ 7p^6$
(4) Halogen family, [Rn] $5f^{14}\ 6d^{10}\ 7s^2\ 7p^5$

NEET(UG) 2018

22. Which of the following oxides is most acidic in nature ?

(1) MgO (2) BeO (3) BaO (4) CaO

23. The correct order of atomic radii in group 13 elements is

(1) B < Al < In < Ga < Tl
(2) B < Al < Ga < In < Tl
(3) B < Ga < Al < Tl < In
(4) B < Ga < Al < In < Tl

NEET(UG) 2019

24. Which of the following is an amphoteric hydroxide?

(1) $Sr(OH)_2$ (2) $Ca(OH)_2$
(3) $Mg(OH)_2$ (4) $Be(OH)_2$

25. For the second period elements the **correct** increasing order of first ionisation enthalpy is :-

(1) Li < Be < B < C < N < O < F < Ne
(2) Li < B < Be < C < O < N < F < Ne
(3) Li < B < Be < C < N < O < F < Ne
(4) Li < Be < B < C < O < N < F < Ne

26. 4d, 5p, 5f and 6p orbitals are arranged in the order of decreasing energy. The **correct** option is :-

(1) 5f > 6p > 5p > 4d
(2) 6p > 5f > 5p > 4d
(3) 6p > 5f > 4d > 5p
(4) 5f > 6p > 4d > 5p

NEET(UG) 2019 (ODISHA)

27. Match the oxide given in column A with its property given in column B:

Column-A	**Column-B**
(i) Na_2O	(a) Neutral
(ii) Al_2O_3	(b) Basic
(iii) N_2O	(c) Acidic
(iv) Cl_2O_7	(d) Amphoteric

Which of the following options has all correct pairs?

(1) (i)-(b), (ii)-(a), (iii)-(d), (iv)-(c)
(2) (i)-(c), (ii)-(b), (iii)-(a), (iv)-(d)
(3) (i)-(a), (ii)-(d), (iii)-(b), (iv)-(c)
(4) (i)-(b), (ii)-(d), (iii)-(a), (iv)-(c)

NEET(UG) 2020

28. Identify the **incorrect** match :

Name	**IUPAC Official Name**
(a) Unnilunium	(i) Mendelevium
(b) Unniltrium	(ii) Lawrencium
(c) Unnilhexium	(iii) Seaborgium
(d) Unununnium	(iv) Darmstadtium

(1) (d), (iv) (2) (a), (i)
(3) (b), (ii) (4) (c), (iii)

29. Match the following :

Oxide	**Nature**
(a) CO	(i) Basic
(b) BaO	(ii) Neutral
(c) Al_2O_3	(iii) Acidic
(d) Cl_2O_7	(iv) Amphoteric

Which of the following is **correct** option?

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iv)	(iii)	(ii)	(i)
(2)	(i)	(ii)	(iii)	(iv)
(3)	(ii)	(i)	(iv)	(iii)
(4)	(iii)	(iv)	(i)	(ii)

NEET(UG) 2020(COVID-19)

30. Match the element in column I with that in column II.

Column-I	**Column-II**
(a) Copper	(i) Non-metal
(b) Fluorine	(ii) Transition metal
(c) Silicon	(iii) Lanthanoid
(d) Cerium	(iv) Metalloid

Identify the correct match :

(1) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
(2) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
(3) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
(4) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

31. Identify the **incorrect** statement from the following:

(1) Zirconium and Hafnium have identical radii of 160 pm and 159 pm, respectively as a consequence of lanthanoid contraction.

(2) Lanthanoids reveal only +3 oxidation state.

(3) The lanthanoid ions other than the f^0 type and the f^{14} type are all paramagnetic.

(4) The overall decrease in atomic and ionic radii from lanthanum to lutetium is called lanthanoid contraction.

32. Which of the following oxide is amphoteric in nature?

(1) SnO_2 (2) SiO_2

(3) GeO_2 (4) CO_2

NEET(UG) 2021

33. **Statement I :**

Acid strength increases in the order given as HF << HCl << HBr << HI.

Statement II :

As the size of the elements F, Cl, Br, I increases down the group, the bond strength of HF, HCl, HBr and HI decreases and so the acid strength increases.

In the light of the above statements, choose the **correct** answer from the options given below.

(1) Both **Statement I** and **Statement II** are true.

(2) Both **Statement I** and **Statement II** are false.

(3) **Statement I** is correct but **Statement II** is false.

(4) **Statement I** is incorrect but **Statement II** is true.

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**4**	**1**	**3**	**3**	**2**	**1**	**4**	**3**	**2**	**3**	**2**	**2**	**1**	**1**	**2**
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	**1**	**2**	**3**	**2**	**2,3**	**1**	**2**	**4**	**4**	**2**	**1**	**4**	**1**	**3**	**2**
Que.	31	32	33												
Ans.	**2**	**1**	**1**												