



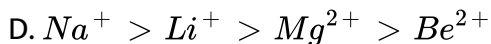
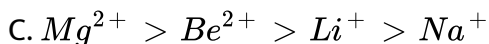
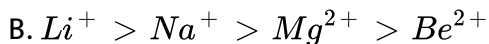
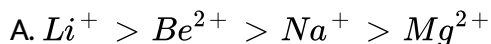
CHEMISTRY

BOOKS - NTA MOCK TESTS

CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES TEST

Single Choice

1. The set representing the correct order of ionic radii is



Answer: D



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2. Electron Affinity of Cl is 3.7 eV. How much Energy released in kCal when 2g of gaseous chlorine atoms is converted to cl ions in the gaseous state.

A. 4.80 kcal

B. 5.20 kcal

C. 1.50 kcal

D. 3.60 kcal

Answer: A



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3. The Energy needed for $Li(g) \rightarrow Li^{3+}(g) + 3e^{-}$, is $19600 \text{ kJ mole}^{-1}$.

The first ionisation energy of Li (g) = 520 kJ mole^{-1} . Calculate IE_2 For

Li(g) (ionisation energy of H = 13.6 eV)

- A. 75.3 eV/species
- B. 25.30 eV/species
- C. 30.45 eV/species
- D. 62.40 eV/species

Answer: A

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4. For the gaseous the reaction $K(g) + F(g) \rightarrow K^+(g) + F^-(g)$, ΔH was calculated to be 19 kcal under conditions when the electrostatic attraction was prevented. IE_1 of K is 4.3 eV. Find the EA_1 of F.

- A. 3.47 eV species⁻¹
- B. 0.30 eV species(- 1)
- C. 3.50 eV species⁻¹
- D. 5.20 eV species⁻¹

Answer: A



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5. If the electronegativity of A is 2.0 and that of B is 3.0, what is the percentage of the covalent character of the bond A - B?

A. 0.805

B. 0.9

C. 0.46

D. 0.54

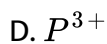
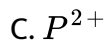
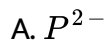
Answer: A



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6. The successive ionisation energies in kJ mol^{-1} of an element P are 740, 1500, 10500, 13600, 18000 and 21700. Which ion is the most likely to be

formed when P reacts with chloride?



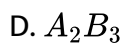
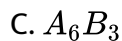
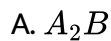
Answer: C



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7. The valence electrons in the element A are 3 and those in element B are

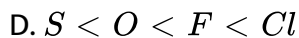
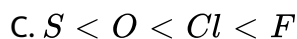
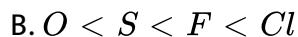
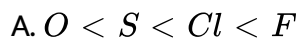
6. The most probable compound formed by A and B is



Answer: D

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8. The electron affinities of O, F, S and Cl are in the order

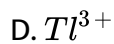
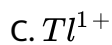
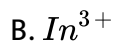


Answer: B

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9. Which of the following cations acts as oxidizing agent ?





Answer: D

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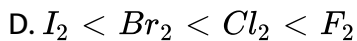
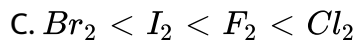
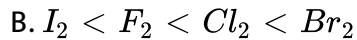
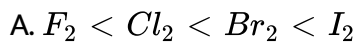
10. The trivalent ion having largest size in lanthanoid series is



Answer: D

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11. The correct order of increasing oxidising power is



Answer: D



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12. Which of the following is a typical element?

A. Fe

B. Na

C. Co

D. Sc

Answer: B

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13. Calculate the electronegativity of fluorine using the following data.

$$E_{H-H} = 104.2 \text{ kcal mol}^{-1}, E_{F-F} = 36.6 \text{ kcal mol}^{-1}, E_{H-F} = 144.6 \text{ kcal mol}^{-1}$$

and the electronegativity of H = 2.1.

A. 2.53

B. 3.87

C. 4

D. 4.2

Answer: B

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14. Which of the following set of elements can not be a triad ?

A. Li, Na, K

B. B, Al, Ga

C. Ca, Sr, Ba

D. Cl, Br, I

Answer: B

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15. Which among the following is the incorrect order of size?

A. $Ni < Pd \approx Pt$

B. $Ti < Zr \approx Hf$

C. $Ti < Zr < Hf$

D. $Cu < Ag \approx Au$

Answer: C

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16. The first ionisation energies in eV/atom of magnesium and aluminium are respectively given by which of the following?

A. 7.64, 5.98

B. 7.64, 7.64

C. 5.98, 7.64

D. 5.98, 5.98

Answer: A



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17. Which one of the following is not a representative element?

A. Fe

B. K

C. Ba

D. N

Answer: A

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18. The 15 elements have been placed in VI period and third group of the periodic table. They are called

A. alkaline earth metals

B. inert gases

C. alkali metals

D. rare earth metals

Answer: D

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19. The atomic masses of Li and K are 7 and 39, respectively. According to law of triads the atomic mass of Na will be

- A. 23
- B. 32
- C. 46
- D. 64

Answer: A



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20. A trend which is common to elements of both the group 1st and group 17th, on going from top to bottom

- A. Boiling point increases
- B. Electron affinity increases
- C. Oxidising power increases

D. Ionization energy decreases

Answer: D

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21. Which among the following statements is correct?

A. Generally, the reducing character of elements increases along a period

B. Generally, the oxidising character of elements increases along a period

C. Generally, the basic character of oxides decreases down a group

D. All are correct

Answer: B

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22. Which of the following is incorrect ?

A. IE_1 of $Li < IE_1$ of Be

B. IE_1 of $Be < IE_1$ of B

C. IE_1 of $Li > IE_1$ of Na

D. IE_1 of He gt IE_1 of Ne

Answer: B



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23. The ionic radii (in Å) of N^{3-} , O^{2-} and F^- are respectively:

A. 1.71, 1.36 and 1.40

B. 1.36, 1.40 and 1.71

C. 1.36, 1.71 and 1.40

D. 1.71, 1.40 and 1.36

Answer: D



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24. The attractive force exerted by an atom on an electron pair shared with another atom is referred to as its

- A. electron affinity
- B. electronegativity
- C. ionisation potential
- D. valency

Answer: B



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25. The correct order of covalent, van der Waals and crystal radii is

A. $r_{\text{covalent}} < r_{\text{crystal}} < r_{\text{van der waals}}$

B. $r_{\text{covalent}} < r_{\text{van der waals}} < r_{\text{crystal}}$

C. $r_{\text{crystal}} < r_{\text{covalent}} < r_{\text{van der waals}}$

D. $r_{\text{crystal}} < r_{\text{van der waals}} < r_{\text{covalent}}$

Answer: A



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26. The effective nuclear charge for an electron in ${}_7\text{N}^{14}$ will be (using slater's rule)

A. 3.25

B. 3.55

C. 2.25

D. 9.3

Answer: B

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27. What is the atomic number of the element with symbol Uus?

A. 117

B. 116

C. 115

D. 114

Answer: A

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28. The atomic number of an element is 35. What is the total number of electrons present in all the p-orbitals of the ground state atom of that element.

A. 6

B. 11

C. 17

D. 23

Answer: C



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29. Which of the elements, whose atomic number are given below, cannot be accommodated in the present set up of the long form of the periodic table?

A. 107

B. 118

C. 126

D. 102

Answer: C



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30. The atomic number of element Unq is

A. 102

B. 103

C. 104

D. 105

Answer: C



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