



CHEMISTRY

NCERT - NCERT CHEMISTRY(TELUGU)

PERIODIC CLASSIFICATION-I

Example

1. The element $Z=117$ has not been discovered. In which group would you place these element and also give the electronic configuration.



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2. The order of metallic character of Si, Na, Mg, P is



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3. Which of the following species will have the largest and the smallest size Mg , Mg^{2+} , Al , Al^{3+} ?



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4. Which of the following will have the most negative electron gain enthalpy and which has the least negative?

P, S, Cl, F.

Explain your answer.



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Questions Choose The Best Answer

1. The element with atomic number 31 belongs to :

A. d-block

B. f-block

C. p-block

D. s-block

Answer:



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2. Representative elements are those which belong to :

A. s and d-block

B. s and p-blocks

C. p and d-blocks

D. d and f-blocks

Answer:



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3. The most electronegative element of the periodic table is :

A. Iodine

B. Flourine

C. Chlorine

D. Oxygen

Answer:



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4. Which of the following forms stable gaseous negative ion

A. F

B. Cl

C. Br

D. I

Answer:



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5. The elements having highest ionization energies within their periods are called :

A. Halogens

B. Noble gases

C. Alkali metals

D. Transition elements

Answer:



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6. A property which progressively increases down a group in the periodic table is :

- A. Ionization enthalpy
- B. Electronegativity
- C. Electron gain enthalpy
- D. Strength as a reducing agent.

Answer:



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7. Elements whose atoms have their s and p-sub-levels complete are the:

- A. Normal elements
- B. Transition elements
- C. Halogens
- D. Inert gases.

Answer:



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8. The law of triad is applicable to :

A. Chlorine, bromine and iodine

B. Hydrogen, oxygen and nitrogen

C. Sodium, neon and calcium

D. All of the above

Answer:



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9. The law of octaves was stated by :

A. Dobereiner

B. Mendeleev

C. Moseley

D. Newland

Answer:



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10. Which of the following property decreases down a group :

A. Ionization enthalpy

B. Atomic radii

C. Valency

D. All the above properties

Answer:



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11. Which of the following has the lowest melting point ?

A. CsCl

B. RbCl

C. KCl

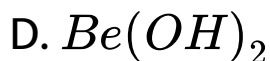
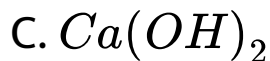
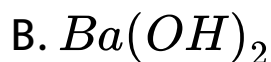
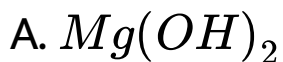
D. NaCl

Answer:



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12. Which of the following hydroxide is most basic ?



Answer:



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13. Excluding hydrogen and helium, the smallest element in the periodic table is :

A. lithium

B. Oxygen

C. Fluorine

D. Chlorine

Answer:



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14. Which one among the following species has the largest atomic radius:

A. Na

B. Mg

C. Al

D. Si

Answer:



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15. Which among the following is the lightest metal ?

A. Calcium

B. Lithium

C. Magnesium

D. Sodium

Answer:



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16. Which of the following has highest ionization potential?

A. Sodium

B. Magnesium

C. Carbon

D. Fluorine

Answer:



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17. With respect to chlorine, hydrogen will be

A. Electropositive

B. Electronegative

C. Neutral

D. None of these.

Answer:



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18. Which of the following element has the greatest tendency to lose electrons ?

A. Chlorine

B. Sulphur

C. Francium

D. Beryllium

Answer:



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19. Halogens belong to the :

A. s-block

B. p-block

C. d-block

D. f- block

Answer:



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20. Compared to first ionization enthalpy of an atom, the second is :

A. Greater

B. Less

C. Same

D. Negligible

Answer:



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21. The correct arrangement of increasing atomic radius among Na, K, Mg, Rb

A. Na, Mg, K, Rb

B. Na, K, Mg, Rb

C. Mg, Na, K, Rb

D. Na, Mg, Rb, K

Answer:



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22. The first attempt to classify the elements was made by :

A. Mendeleev

B. Newland

C. Lothar Meyer

D. Dobereiner

Answer:



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23. Characteristic of transition elements is incomplete in :

A. d-orbitals

B. f-orbitals

C. p-orbitals

D. s-orbitals

Answer:



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24. Which of the following will have lowest first ionization enthalpy ?

A. Na

B. Al

C. Mg

D. Si

Answer:



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25. Which of the following atoms is likely to give off more energy on gaining an electron ?

A. Na

B. Mg

C. Al

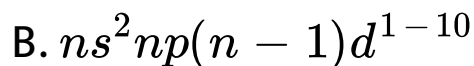
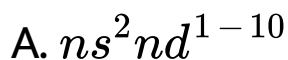
D. Cl

Answer:



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26. Transition metals have the electronic configuration :



$$C. ns^{1-2}(n-1)d^{1-10}$$

$$D. ns^2np^6(n-1)d^{1-10}$$

Answer:



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27. In the first transition series the incoming electron enters the :

A. 4d-orbital

B. 3d-orbital

C. 5d-orbital

D. 6d-orbital

Answer:



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Questions Fill In The Blanks

1. As per the Modern periodic law, the physical and chemical properties of elements are periodic functions of their



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3. The long form of the periodic table is constructed on the basis of repeating electronic of the atoms when they are

arranged in the order of increasing atomic numbers.



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4. The first three periods containing 2, 8 and 8 elements respectively are called



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5. The valency of representative elements is given by the number of electrons in the

outermost orbital and/or equal to

Minus the number of outermost electrons.



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Questions Write In One Or Two Sentence

1. Arrange F, Cl, Br and I in the order of increasing electron gain enthalpy.



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2. Write electronic configurations for the elements of atomic numbers 6 and 14 and from this find out of which group in the periodic table each elements belongs.



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3. Which of the following electronic configurations has the lowest ionization enthalpy ?

(a) $1s^2, 2s^2, 2p^6$, (b) $1s^2, 2s^2, 2p^6$

(c) $1s^2, 2s^2, 2p^6, 3s^2$.



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4. Write modern periodic law .



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5. Why Noble gases have zero electron gain enthalpy?



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6. Which of the following pairs of elements would you expect to have lower first ionization enthalpy ? (a) Cl or F , (b) Cl or S , (c) K or Ar , (d) Kr or Xe.



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7. Why do elements in the same group have similar physical and chemical properties?



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8. Name any two transition elements and any two inner transition elements.



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9. Arrange the order of increasing atomic volumes in : (a) Li, Na and K, (b) C, N and O , (c) Ca, Sr and Ba.



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10. Name the different blocks of elements in periodic table. Give the general electronic configuration of each block.



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11. To which block does the element with valence configuration $3d^{10}4s^2$ belongs



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12. Why nitrogen has higher I.E. value than oxygen?



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13. Out of fluorine and chlorine, which has greater electron gain enthalpy?



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14. Why are d-block elements called transition elements ?



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15. What property did Mendeleev use to classify elements in his periodic table?



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16. Among the elements Li, K, Ca, S and Kr which one has the lowest first ionization enthalpy? Which has the highest first ionization enthalpy?



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Questions Explain Briefly The Following

1. Why does the first ionization enthalpy would have higher electron gain enthalpy?



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2. Which of the following pairs of elements would have higher electron gain enthalpy? (a) N or O , (b) F or Cl . Explain.



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3. Why are lanthanides and actinides placed separately at the bottom of the periodic table ?



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4. What do you mean by representative elements? Name the groups of the periodic table, which contain representative elements.



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5. Define transition elements. Name the different transition series.



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6. Which element of the following pairs have smaller ionization enthalpy? (a) Ca or Be , (b) Ca or K , (c) Cl or I. Justify your answer.



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7. Why is Na atom bigger than the atoms of both lithium and magnesium ?



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8. What do you mean by the term electron gain enthalpy? How does electron gain enthalpy change along a period and in a group?



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9. Explain how the elements are arranged in the form of the periodic table.



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10. What are normal, transition and inner-transition elements?



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11. What are the differences between normal and transition elements?



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12. Explain why cation is smaller and anion is larger in radii than their parent atoms.



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13. Explain the size of ion $Cl^{-1} > Na^{+}$.



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14. What is electron gain enthalpy? On what factors does it depend?



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15. Give the general variation of electron gain enthalpies in the periodic table.



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16. Define the term solution.



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17. What do you mean by ionization enthalpy?

How does it vary across a period and down a group?



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18. What is meant by electronegativity? On what factors does it depend?



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19. What are the essential features of the periodic table of Mendeleev? Discuss how his table has been modified subsequently.



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