

QB365 Question Bank Software Study Materials

Periodic Classification of Elements Important 2 Marks Questions With Answers (Book Back and Creative)

10th Standard

Science

Total Marks : 60

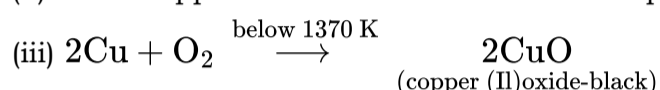
2 Marks

30 x 2 = 60

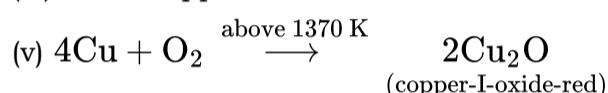
- 1) A is a reddish brown metal, which combines with O_2 at < 1370 K gives B, a black coloured compound. At a temperature > 1370 K, A gives C which is red in colour. Find A, B and C with reaction.

Answer : (i) A - reddish brown metal - Copper

(ii) When copper is heated at < 1370 K in the presence of oxygen, copper forms black colour Copper (II) oxide (CuO).



(iv) When copper is heated at > 1370 K in the presence of oxygen, copper forms red colour Cop-per (I) oxide (Cu_2O)



(vi) A - copper (Cu)

(vii) B - copper (II) oxide (CuO) - Black coloured

(viii) C - *copper - I - oxide* (Cu_2O) - Red coloured

- 2) A is a silvery white metal. A combines with O_2 to form B at $800^\circ C$, the alloy of A is used in making the aircraft. Find A and B.

Answer : (i) On heating $800^\circ C$, aluminium burns very brightly forming its oxide.



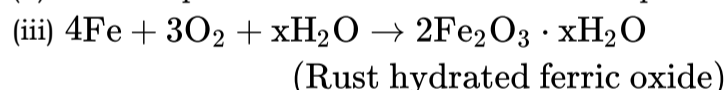
(iii) A is Aluminium (Al)

(iv) B is Aluminium oxide (Al_2O_3)

- 3) What is rust? (or) How is rust formed? Give the equation for formation of rust.

Answer : (i) Rust is the formation of scaling reddish brown hydrated ferric oxide on the surface of iron containing materials.

(ii) This compound is known as rust and the phenomenon of formation of rust is known as rusting.



- 4) State two conditions necessary for rusting of iron.

Answer : **Conditions necessary for rusting of iron:**

(i) Iron is exposed to moist air.

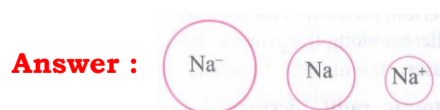
(ii) Presence of water droplets in the atmosphere.

(iii) Presence of Oxygen.

- 5) Atomic radii decreases as we move from left to right of periodic table. Justify your answer

Answer : As move along the period, the shell number remains same but the number of protons increases. Increased positive charges impose strong attraction over electrons and thus the electron cloud shrinks towards the nucleus which results in decrease in atomic size.

- 6) Say whether the following diagrammatic representation is true or false. Give reason.



True. The size of the anion is larger than the neutral atom and size of the cation is smaller than the neutral atom.

- 7) Define the term Ionic Radii.

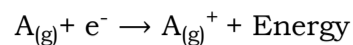
Answer : Atomic radii is defined as the distance from the centre of the nucleus of the ion upto the point where it exerts its influence on the electron cloud of the ion.

Explain the variation of ionisation energy from left to right of the periodic table.

8) **Answer :** As the atomic size decreases from left to right in a period, more energy is required to remove the electrons. So the ionisation energy increases along the period.

9) Define electron affinity

Answer : Electron affinity is the amount of energy released when a gaseous atom gains an electron to form its anion.



10) Name a metal that can be cut with a knife.

Answer : Sodium

11) Name the important ores of Copper.

Answer : (i) Copper pyrites CuFeS_2

(ii) Cuprite or ruby copper Cu_2O

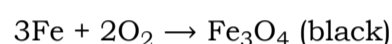
(iii) Copper glance Cu_2S

12) What is anode mud?

Answer : When electric current is passed through the electrolytic solution, pure copper gets deposited at the cathode and the impurities settle at the bottom of the anode in the form of sludge called anode mud.

13) Explain the action of heat on Iron.

Answer : Reaction with air or oxygen: On heating in air, iron forms magnetic oxide.



14) Write the uses of Pig iron.

Answer : Pig iron it is used in making pipes, stoves, radiators, railings, manhole covers and drain pipes.

15) Give appropriate reasons for alloying.

Answer : Reasons for alloying:

(i) To modify appearance and colour

(ii) To modify chemical activity.

(iii) To lower the melting point.

(iv) To increase hardness and tensile strength.

(v) To increase resistance to electricity.

16) What is Duralumin? Give its uses

Answer :

ALLOYS	USES
Duralumin (Al, Mg, Mo, Cu)	Aircrafts, tools, pressure cookers
Magnalium (Al, Mg)	Aircraft, scientific instruments

17) What is Sacrificial metal?

Answer : The easily corrodible metal is called Sacrificial metal

18) What are called periodic properties?

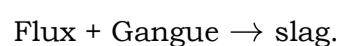
Answer : Properties such as atomic radius, ionic radius, ionisation energy, electronegativity, electron affinity show a regular periodicity. They are called periodic properties.

19) Define Ores.

Answer : The mineral from which a metal can be readily and economically extracted on a large scale is said to be an ore.

20) Define slag.

Answer : It is the fusible product formed when a flux reacts with a gangue during the extraction of metals.



21) Write the halide ores.

Answer : Cryolite - Na_3AlF_6 .

Fluosspar- CaF_2 .

Rock salt- $NaCl$.

22) Write the physical properties of copper.

Answer : Copper is a reddish brown metal with high lustre, high density and high melting point (1356°C).

23) Uses of Copper.

Answer : (i) It is extensively used in manufacturing electric cables and other electric appliances.

(ii) It is used for making utensils, containers, calorimeters and coins.

(iii) It is used in electroplating.

(iv) It is alloyed with gold and silver for making coins and jewels.

24) Write the uses of iron.

Answer : (i) **Pig iron (Iron with 2 -4.5% of Carbon)**: it is used in making pipes, stoves, radiators, railing, manhole covers and drain pipes.

(ii) **Steel (Iron with < 0.25%)** : It is used in the construction of buildings, machinery, transmission cables and T.V. towers and in making alloys.

(iii) **Wrought Iron (Iron with 0.25% — 2%)** : It is used in making springs, anchors and electromagnets.

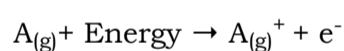
25) Write the copper alloys and their uses.

Answer :

Alloys	Uses
Brass (Cu, Zn)	Electrical fittings, medal, decorative items, hardware.
Bronze (Cu, Sn)	Statues, coins, bells and gongs.

26) Define Ionisation enthalpy.

Answer : Ionisation energy is the minimum energy required to remove an electron from a gaseous atom in its ground state to form a cation. It is otherwise called ionisation enthalpy.

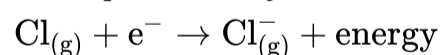


(First ionisation energy, E_1)

27) What is electron affinity?

Answer : Electron affinity is the amount of energy released when an Isolated gaseous atom gains an electron to form its anion.

It is represented by



28) List the physical properties of Iron.

Answer : (i) Iron is a lustrous metal.

(ii) It is of greyish white in colour.

(iii) It has high tensility, malleability and ductility.

(iv) It can be magnetized.

29) Define - Ionisation Energy.

Answer : Ionisation energy is the minimum energy required to remove an electron from an Isolated gaseous atom in its ground state to form a cation. It is otherwise called as ionisation enthalpy.

30) Electronegativity value of hydrogen is 2.1 and that of sodium is 1. Find out the nature of bonding present in the compound, When hydrogen combines with fluorine and hydrogen combines with sodium. (Electronegativity value of fluorine is 4).

Answer : i) $EN_H = 2.1$, $EN_{Na} = 1$, $EN_F = 4$

ii) Electronegativity of HF = $4 - 2.1 = 1.9$: The difference is greater than 1.7, the bond is ionic in nature.

iii) Electronegativity of NaH = $2.1 - 1 = 1.1$; The difference is less than 1.7, the bond is covalent in nature.