

Marks: 40

I. Fill in the blanks

10x1=10

1. _____ and _____ are called inner transition elements.
2. _____ is the longest period in the periodical table .
3. _____ forms the basis of modern periodic table.
4. The chief ore of Aluminium is _____.
5. If the distance between two Cl atoms in Cl₂ molecule is 1.98Å, then the radius of Cl atom is _____.
6. Among the given species A⁻, A⁺, and A, the smallest one in size is _____.
7. If the electronegativity difference between two bonded atoms in a molecule is greater than 1.7, the nature of bonding is _____.
8. The scientist who propounded the modern periodic law is _____.
9. Across the period, ionic radii _____ (increases , decreases).
10. The chemical name of rust is _____.

III. Match the following

5 x 1 = 5

11. Galvanisation - Noble gas elements
12. Calcination - Coating with Zn
13. Redox reaction - Silver-tin amalgam
14. Dental filling - Alumino thermic process
15. Group 18 elements - Heating in the absence of air

IV. True or False: (If false give the correct statement)

1 x2 = 2

16. Moseley's periodic table is based on atomic mass.
17. Ionic radius increases across the period from left to right

VI. Short answer questions

4x2=8

18. What is rust? Give the equation for formation of rust.
19. State two conditions necessary for rusting of iron.
20. A is a reddish brown metal, which combines with O_2 at $< 1370\text{ K}$ gives B, a black coloured compound. At a temperature $> 1370\text{ K}$, A gives C which is red in colour.

Find A, B and C with reaction.

21. A is a silvery white metal. A combines with O_2 to form B at 800°C , the alloy of A is used in making the aircraft. Find A and B

VII. Long answer questions

3x5=15

22. Explain smelting process.
23. a) State the reason for addition of caustic alkali to bauxite ore during purification of bauxite.
b) Along with cryolite and alumina, another substance is added to the electrolyte mixture. Name the substance and give one reason for the addition.
24. The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with con. H_2SO_4 forms C and D along with water. D is a gaseous compound. Find A, B, C and D.