1. Aluminium is obtained from Al_2O_3 by this method
(1) Thermal reduction.
(2) Hydro metallurgical method.
(3) Electrolytic reduction.
(4) Reduction by iron.

2. Zinc blende on roasting in air gives :–
(1) Zinc carbonate (2) SO_2 and ZnO
(3) ZnS and $ZnSO_4$ (4) CO_2 and ZnO

3. The oxide cannot be reduced by coke
(1) Cu_2O, ZnO (2) Fe_2O, ZnO
(3) CaO, K_2O (4) PbO, Fe_3O_4

4. Which is not a basic flux :-
(1) Silica (2) Lime stone
(3) Calcite (4) Quick lime

5. Iron pyrites ore is concentrated by:-
(1) Froth floatation (2) Electrolysis
(3) Roasting (4) Magnetic separation

6. In Goldschmidt thermite process, reducing agent is:-
(1) Fe (2) Na
(3) Ca (4) Al

7. Liquation process is used for refining:-
(1) Bismuth (2) Lead
(3) Tin (4) All

8. Autoreduction process is used in the extraction of:-
(1) Cu & Pb (2) Zn & Hg
(3) Cu & Al (4) Fe & Pb

9. In the electrolytic refining of copper, Ag and Au are found:-
(1) On cathode (2) On anode
(3) In the anodic mud (4) In the cathodic mud

10. Which of the following metals can not be extracted by carbon reduction process :–
(1) Pb (2) Al
(3) Sn (4) Zn

11. The maximum temperature obtained in the....region of the blast furnace used in extraction of iron:-
(1) Reduction (2) Combustion
(3) Fusion (4) Slag formation

12. Which of the following process involves smelting
(1) $2\ PbS + 3O_2 \rightarrow 2PbO + 2SO_2\uparrow$
(2) $Al_2O_3.\ 2H_2O \rightarrow Al_2O_3 + 2H_2O$
(3) $Fe_2O_3 + CO \rightarrow 2Fe + 2CO_2$
(4) $Cr_2O_3 + 2Al \rightarrow Al_2O_3 + 2Cr + Heat$

13. In the extraction of copper from pyrites, iron is removed as:-
(1) $FeSO_4$ (2) $FeSiO_3$
(3) Fe_3O_4 (4) Fe_2O_3

14. Which one of the following metals can not be extracted by using Al as a reducing agent :-
(1) Na from Na_2O (2) Cr from Cr_2O_3
(3) Mn from MnO_2 (4) V from V_2O_5

15.

Column – I	**Column – II**
(A) Metal which occur in the native state in nature is	(P) Hg
(B) The oxides of metal that can be commercially reduced by Aluminorthermite reduction process is	(Q) Ti
(C) van Arkel method is used for preparing ultrapure metal of	(R) Cr
(D) Auto reduction process is employed for the sulphide ore of	(S) Ag

(1) A-S, B-R, C-Q, D-P (2) A-R, B-S, C-Q, D-P
(3) A-P, B-S, C-Q, D-R (4) A-Q, B-R, C-S, D-P

16. Which of the following pairs of metals is purified by Van Arkel method ?
(1) Ga and In (2) Zr and Ti
(3) Ag and Au (4) Ni and Fe

17. The following reactions take place in the blast furnace in the preparation of impure iron. Identify the reaction pertaining to the formation of the slag:-
(1) $2C(s) + O_2(g) \rightarrow 2CO(g)$
(2) $Fe_2O_3(s) + 3CO(g) \rightarrow 2Fe(\ell) + 3CO_2(g)$
(3) $CaCO_3(s) \rightarrow CaO(s) + CO_2(g)$
(4) $CaO(s) + SiO_2(s) \rightarrow CaSiO_3(s)$

18. Aluminium is extracted from alumina (Al_2O_3) by electrolysis of a molten mixture of:
(1) $Al_2O_3 + Na_3AlF_6 + CaF_2$
(2) $Al_2O_3 + KF + Na_3AlF_6$
(3) $Al_2O_3 + HF + NaAlF_4$
(4) $Al_2O_3 + CaF_2 + NaAlF_4$

19. Which one of the following is not a method of concentration of ore?
(1) gravity separation
(2) froth floating process
(3) electromagnetic separation
(4) smelting

20. Chemical leaching is useful in the concentration of:
(1) copper pyrites (2) bauxite
(3) galena (4) cassiterite

21. During initial treatment, preferential wetting of ore by oil and gangue by water takes place in
(1) Levigation (gravity separation)
(2) Froth floatation
(3) Leaching
(4) Bessemerisation

22. The benefactions of the sulphide ores is usually done by
(1) Electrolysis
(2) Smelting process
(3) Metal displacement method
(4) Froth flotation method

23. Calcination is the process of heating the ore:
(1) in inert gas
(2) in the presence of air
(3) in the absence of air
(4) in the presence of CaO and MgO

24. When roasting is carried out :
(i) Sulphide ore are convert to oxide and sulphate
(ii) remove water of hydration
(iii) melt the ore
(iv) remove arsenic and sulphur impurities
Of these statements:
(1) (i), (ii) and (iii) are correct
(2) (i) and (iv) are correct
(3) (i), (ii) and (iv) are correct
(4) (ii), (iii) and (iv) are correct

25. In the alumino thermite process, Al acts as
(1) An oxidising agent
(2) A flux
(3) A reducing agent
(4) A solder

26. Which of the following employ(s) thermal decomposition of volatile iodide compounds?
(1) Thermite process
(2) Hall's process
(3) Van-Arkel's process
(4) Mond's process

27. Refining of silver is done by:
(1) liquation (2) poling
(3) cupellation (4) van Arkel method

28. Iron obtained from blast furnace is:
(1) wrought iron (2) cast iron
(3) pig iron (4) steel

29. Which of the following term is not related to Al-extraction
(1) Serpek's process
(2) Hall-Heroult process
(3) Thermite process
(4) Hoop's process

30. Silica is added to roasted copper ores during extraction in order to remove
(1) cuprous sulphide
(2) ferrous oxide
(3) ferrous sulphide
(4) cuprous oxide

ANSWER KEY Exercise-I

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