PART-II_CHEMISTRY **Max Marks : 60**

Section-1
(One or More options Correct Type)

This section contains 10 multiple choice equations. Each question has four choices (**A**) (**B**)(**C**) and (**D**) out of which **ONE or MORE** are correct.

21. I_2 is liberated when KI is added to a solution of

A) acidified $KMnO_4$ B) acidified $K_2Cr_2O_7$

C) acidified H_2O_2 D) aqueous $CuSO_4$

22. How many of the following precipitated from the aqueous solution when silver acetate solution is added ?

A) F^- B) NO_3^- C) Br^- D) I^-

23. When F_2 reacts with sodium hydroxide solution, the products formed are

A) O_2 B) OF_2 C) NaF D) H_2O_2

24. In which of the following reactions, O_2 is one of the products

A) $CaOCl_2 \xrightarrow[\Delta]{CoCl_2}$ B) $F_2 + H_2O \rightarrow$

C) $KClO_3 \xrightarrow[\Delta]{MnO_2}$ D) $XeF_4 + H_2O \rightarrow$

25. $XeO_3 + 2XeF_6 \rightarrow 3'P'$, $XeO_3 + P \rightarrow 2'Q'$. The true statements regarding P and Q are

A) P has 5σ and 1π bonds

B) Q has a lone pair on Xe in the axial position

C) P has Xe in sp^3d^2 hybridization

D) Q reacts with water giving XeO_3

26. Which of the following give Xe as the product if XeF_2 reacts with

A) H_2 B) HCl C) $SiO_2(dry)$ D) H_2O

27. Which of the following are the oxide ores ?

A) Haemetite B) Limonite C)Cryolite D) Pitch blende

28. Which of the following metals can be purified by distillation process ?

A) Zn B) Hg C) Cu D) Ti

29. Which of the following can be used as a lining in the furnace to remove acidic impurities ?

A) Lime stone B) Dolomite C) Magnesite D) Silica

30. Which metals can be extracted commercially by using coke ?

A) Fe B) Zn C) Al D) Sn

Section-2
(Integer Value Correct Type)

This section contains 10 questions. The answer to each question is a **single digit integer, ranging** from 0 to 9 (both inclusive).

31. Euchlorine is a mixture of A + B. The oxidation states of chlorine in 'A' and B are $'x'$ and y respectively, then $(x+y)$ is

32. $'p'\ NaClO \xrightarrow[\Delta]{} x+y$, fill up x and y and balance. In the balanced equation, the value of $'p'$ (minimum value) is

33. The number of colored compounds(except white) are

$AgI, AgF, AgCl, HgI_2, PbCl_2, PbI_2, TlI$

34. The water insoluble compounds are

$CaCl_2, CaF_2, Hg_2Cl_2, AgF, AgCl, TlCl, HgI_2$

35. $XeF_6 + \underset{(1\,mole)}{H_2O} \rightarrow A + 2HF$. 'A' has $'x'\sigma$ bonds, $y\,\pi$ bonds and z lone pairs on Xe atom $(x+y+z)$ is

36. $XeF_6 + SiO_2 \rightarrow A + B$

A has $\underline{x}$ hybridized orbitals and B has $\underline{y}$ hybridized orbitals, then $(x-y)$ is

37. Hausamanite is $Mn_xO_y\,'p'\;Mn_xO_y + 'q'\,Al(\text{powder}) \xrightarrow{\Delta} Mn + Al_2O_3$. Give the correct composition of the hausmanite. Balance the equation. The value 'q' (minimum value) in the stoichiometric equation is

38. $x\,Fe_2O_3 + y\,CO \rightarrow Fe + CO_2$. Balance the equation, the $'y'$ (minimum value) in the stoichiometric equation is

39. $FeS_2 + O_2 \rightarrow P + Q$.

The oxidation state of iron in FeS_2 is 'x', the oxidation state of iron in 'P' is y. The oxidation state of sulphur in 'Q' is $'z'$. Then $(x+y+z)$ is

40. 'Matte' contains A + B, the oxidation state of the metals in A and B are $'x'$ and $'y'$. $(x+y)$ is