MONTHLY TEST-SEPTEMBER 2023

CLASS : XII **MARK : 50**

SUB : CHEMISTRY **UNIT 4,12** **TIME : 1.30 HRS**

`PART-I

I. Choose and write the correct answer : **10 X 1 = 10**

1. Which of the following oxidation states is most common among the lanthanoids?
   a) +4 b) +2 c) +5 d) +3
2. Which one of the following is not correct?
   a) $La(OH)_3$ is less basic than $Lu(OH)_3$
   b) In lanthanoid series ionic radius of Ln^{3+} ions decreases
   c) La is actually an element of transition metal series rather than lanthanoid series
   d) Atomic radii of Zr and Hf are same because of lanthanoid contraction
3. The magnetic moment of Mn^{2+} ion is
   a) 5.92BM b) 2.80BM c) 8.95BM d) 3.90BM
4. The formation of cyanohydrin from acetone is an example of
   a) nucleophilic substitution b) electrophilic substitution
   c) electrophilic addition d) Nucleophilic addition
5. Which one of the following reduces tollens reagent
   a) formic acid b) acetic acid c) benzophenone d) none of these
6. Which one of the following reaction is an example of disproportionation reaction
   a) Aldol condensation b) cannizaro reaction
   c) Benzoin condensation d) none of these
7. Which one of the following is highest oxidation state
   a)Ru b)Os c) Both a and b d) Mn
8. Acid chlorides on heating with sodium salt of carboxylic acids gives _____
   a) Carboxylic acid b) Ester c) Acid anydride d) Amide
9. Which one of the following is correct reactivity order ?
   a) acid halide > acid anhydride < esters > acid amides
   b) acid halide < acid anhydride > esters > acid amides
   c) acid halide < acid anhydride< esters < acid amides
   d) acid halide > acid anhydride > esters > acid amides
10. Amides reacts with bromine in the presence of caustic alkali to form _____
    a) Primary amine b) Primary alcohol c) Both a and b d) none of these

PART-II

II. Answer any Five questions (q.no.17 is compulsory) **5 x 2 = 10**

11. Write the test for carboxylic acid group ?
12. write the HVZ reaction ?
13. What is urotropine ? how it is prepared ?
14. Explain Benedict's solution test

15. Write the electronic configuration of lanthanide and actinide
16. why d block elements exhibit variable oxidation state?
17. Write chromyl chloride test ?

PART-III

III. Answer any Five questions (q.no.24 is compulsory) **5 x 3 = 15**

18. i) Write clemmenson reduction ?
    ii) Write stephenen's reaction ?
19. Name the ester which has the following flavolur ?
    i) banana ii) pine apple iii) orange
20. Explain hume –rothery rule for formation of alloys?
21. Transition metals show high melting points why?
22. What are transition elements ?
23. Why do zirconium and Hafnium exhibit similar properties?
24. Explain the mechanism of cannizaro reaction?

PART-IV

IV. Answer all the questions . **3 x 5 = 15**

25. a) What is lanthanide contraction explain its Consequences ?

(OR)

b) Describe the preparation of $K_2Cr_2O_7$

26. a) i) Compare the properties of lanthanides and actinides
    ii) What are interstitial compounds ?

(OR)

b) Write the mechanism of aldol condensation reaction ?

27. a) How does ammonia react with the following compounds ?
    i) formaldehyde ii) acetone iii) benzaldehyde

(OR)

b) how will you convert benzaldehyde into the following compounds?
    i) benzoin ii)cinnamic acid iii) malachite green

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