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SAKTHI MATRIC HR. SEC. SCHOOL.KANIYAMOOR

MODEL ANNUAL EXAM-4

CLASS : XII E/M

Time: 3.00HRS

SUBJECT : Chemistry

Marks: 70

I CHOOSE THE CORRECT ANSWER:**15*1=15**

1. Electrochemical process is used to extract.....
 - a) Iron
 - b) Lead
 - c) Silver
 - d) Sodium
2. Match the following

a) Potash alum	-	1. $B_3N_3H_6$
b) Diborane	-	2. $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$
c) Beryl	-	3. B - H Bonds
d) Borazole	-	4. Alumino silicates

 - a) a - 2 b - 3 c - 4 d - 1
 - b) a - 1 b - 3 c - 2 d - 4
 - c) a - 4 b - 3 c - 2 d - 1
 - d) a - 3 b - 1 c - 2 d - 4
3. Which of the following is strongest acid among all.....
 - a) HBr
 - b) HF
 - c) HI
 - d) HCl
4. The addition of a catalyst during a chemical reaction alters which of the following quantities?
 - a) Activation energy
 - b) Enthalpy
 - c) Entropy
 - d) Internal energy
5. The actinoid elements which show the highest oxidation state of +7 are
 - a) U, Th, Md
 - b) U, Fm, Th
 - c) Np, Pu, Am
 - d) Es, No, Lr
6. The radius of an atom is 300pm, if it crystallizes in a face centered cubic lattice, the length of the edge of the unit cell is.....
 - a) 488.5pm
 - b) 484.5m
 - c) 884.5pm
 - d) 848.5pm
7. ___ Geometrical isomers for $[M ABCDEF]^{n\pm}$ is..
 - a) 3
 - b) 6
 - c) 12
 - d) 15
8. The pH of $10^{-5}M$ KOH solution will be
 - a) 5
 - b) 9
 - c) 19
 - d) none of these
9. Assertion : pure iron when heated in dry air is converted with a layer of rust.
Reason : Rust has the composition Fe_3O_4
 - a) if both assertion and reason are true and reason is the correct explanation of assertion.
 - b) if both assertion and reason are true but reason is not the correct explanation of assertion.
 - c) assertion is true but reason is false
 - d) both assertion and reason are false.
10. Tyndall effect is a ___ property of colloidal particle
 - a) Optical
 - b) Kinetic
 - c) Electrical
 - d) Electronic
11. $HO-CH_2-CH_2-OH$ on heating with periodic acid gives
 - a) methanoic acid
 - b) methanal
 - c) Glyoxal
 - d) CO_2
12. The formation of cyanohydrin from acetone is an example of
 - a) nucleophilic substitution
 - b) electrophilic substitution
 - c) electrophilic addition
 - d) Nucleophilic addition
13. Ziegler Natta catalyst is _____
 - a) $TiCl_4 + (C_2H_5)_3Al$
 - b) $(CF_2 - CF_2) -$
 - c) $TiCl_4$
 - d) none of these
14. In aqueous solution of amino acids mostly exists in,
 - a) $NH_2-CH(R)-COOH$
 - b) $NH_2-CH(R)-COO^-$
 - c) $H_3N^+-CH(R)-COOH$
 - d) $H_3N^+-CH(R)-COO^-$
15. Bromo ethane react with silver nitrite to give....
 - a) $C_2H_5NO_2$
 - b) $C_2H_5 - O - NO$
 - c) C_2H_5NC
 - d) All of these

II ANSWER ANY SIX QUESTIONS AND QUESTION NO: 24 IS COMPULSORY**6*2=12**

16. Define acid leaching?
17. Explain F_2 always exhibit an -1 oxidation state.
18. Define Homoleptic and heteroleptic?
19. Define average and instantaneous rate.
20. Write the galvanic cell notation for Daniel cell

21. Aniline does not undergo Friedel-Crafts reaction?
 22. What is Glycerose? How is it prepared?
 23. Difference between Thermoplastic and Thermosetting?
 24. $\text{CH}_3\text{NC} \xrightarrow{\text{Heat}/250^\circ\text{C}} \text{A} \xrightarrow{\text{partial hydrolysis}} \text{B}$

III ANSWER ANY SIX QUESTIONS AND QUESTION NO: 33 IS COMPULSORY**6*3=18**

25. Write a note on metallic nature of p-block elements.
 26. Write a note on Ziegler-Natta catalyst
 27. $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ coloured, while $[\text{Sc}(\text{H}_2\text{O})_6]^{3+}$ colourless.
 28. Difference between Td and Oh voids
 29. Write a note on ligands, coordination sphere.
 30. Write the expression for solubility product of..... i) $\text{Ca}_3(\text{PO}_4)_2$ ii) Hg_2Cl_2
 31. What is emulsification and de-emulsification?
 32. Write note on:
 i) Perkins ii) Knoevenagel iii) Benzoin condensation
 33. An organic compound (A) of molecular formula is C_6H_6 on reaction with propylene gives (B) in presence of H_3PO_4 at 532 K. (B) on air oxidation gives (C) ($\text{C}_9\text{H}_{12}\text{O}_2$). (C) on acidification with H_2SO_4 gives (D) Identify A, B, C and D with necessary reaction.

IV ANSWER ALL THE QUESTIONS:**5*5=25**

34. a) Extraction of copper from copper pyrites? (5)
 (OR)
 b) How are silicates classified? Give an example. (3)
 35. a) What is role of catalyst? (2)
 b) Give the uses of coordination compounds. (3)
 (OR)
 c) Calculate the packing efficiency of FCC? (3)
 d) What is meant by coordination number? What is coordination number of BCC structure. (2)
 36. a) Define Half life of a reaction. Show that for a 1st order reaction half life is independent of initial concentration. (5)
 (OR)
 b) Explain buffer action in an acidic buffer. (3)
 c) How to protect the metal from corrosion. (2)
 37. a) Explain Lucas test. (3)
 b) Formaldehyde and benzaldehyde undergo Cannizzaro reaction but Acetaldehyde does not? Why? (2)
 (OR)
 c) Explain the Electrophilic substitution reaction of Anisole. (3)
 d) Difference hormones and vitamins? (2)
 38. a) Difference between DNA and RNA. (2)
 b) Write a note on Nylon-6 and Nylon-66? (3)
 (OR)
 c) Describe the construction of Daniel cell write the cell reaction. (5)

“EDUCATION IS THE MOVEMENT FROM DARKNESS TO LIGHT”.

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