

SAKTHI MATRIC HR. SEC. SCHOOL.KANIYAMOOR

CLASS : XII E/M

MODEL ANNUAL EXAM-5

Time: 3.00HRS

SUBJECT : Chemistry

Marks: 70

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

1. Roasting of sulphide ore gives the gas (A).(A) is a colourless gas. Aqueous solution of (A) is acidic.The gas is
 - a)CO₂
 - b)SO₃
 - c) H₂S
 - d) SO₂
2. Carbon dioxide has.....
 - a)Linear structure
 - b)3C-4e bond
 - c)Equal bond distance for the both c-o bond
 - d)All the Above
3. An element belongs to group 15 and 3rd period of the periodic table, its electronic configuration would be
 - a)1s² 2s² 2p⁴
 - b) 1s² 2s² 2p³
 - c) 1s² 2s² 2p⁶ 3s² 3p²
 - d) 1s² 2s² 2p⁶ 3s² 3p³
4. In acid medium, potassium permanganate oxidizes oxalic acid to
 - a)oxalate
 - b) Carbon dioxide
 - c) acetate
 - d) acetic acid
5. The number of 1^o and 2^o alcohol group in glycerol is.....
 - a) 1, 2
 - b) 2, 1
 - c) 2, 2
 - d) 1, 1
6. The vacant space in bcc lattice unit cell is.....
 - a)48%
 - b) 23%
 - c) 32%
 - d) 26%
7. When sodium acetate is added to acetic acid, the degree of ionization of acetic acid -----
 - a)increases
 - b)decreases
 - c)does not change
 - d)becomes zero
8. Zeisel's salt is ___
 - a)K [PtCl₃ (C₂H₄)]
 - b) [Pt (NH₃)₄] [PtCl₄]
 - c)Ni (CO)₄
 - d)[Ni(CN)₄]²⁻
9. In Arrhenius plot intercept is equal to
 - a)-Ea/R
 - b)ln A
 - c)ln K
 - d)log₁₀ a
10. On which of the following properties does the coagulating power of an ion depend ?
 - a)Both magnitude and sign of the charge on the ion.
 - b) Size of the ion alone
 - c) the magnitude of the charge on the ion alone
 - d) the sign of charge on the ion alone.
11. Pyrimidine bases are _____
 - a) T, C, U
 - b) G, C, T
 - c) A, G, C
 - d) U, C, A
12. Which one of the following reactions is an example of disproportionation reaction
 - a) Aldol condensation
 - b) Cannizzaro reaction
 - c) Benzoin condensation
 - d) none of these
13. Which of the following amines does not undergo acetylation?
 - a) t-butylamine
 - b) ethylamine
 - c) diethylamine
 - d) triethylamine
14. The electrolyte used in the Leclanche cell is.....
 - a) KOH and ZnO
 - b) NH₄Cl and ZnCl₂
 - c) Zinc /Hg
 - d) HgO mixed with Graphite
15. Dettol is the mixture of
 - a) Chloroxylenol and bithionol
 - b) Chloroxylenol and α-terpineol
 - c) phenol and iodine
 - d) terpineol and bithionol

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

16. Write a note on Fisher-Tropsch synthesis
17. Why d-block elements form complex (Coordination compounds)?
18. What are peptizing agents? Give an example?
19. What is primitive and non-primitive unit cell? Give an example.
20. Identify Lewis acid and base
 - i)CH₃⁻
 - ii)BF₃
 - iii)CO₂
 - iv)CaO
21. Write a note on haloform reaction?
22. Difference between rate and rate constant.
23. Classify the following mono, oligo and polysaccharides
 - i)starch
 - ii)fructose
 - iii)sucrose
 - iv)lactose
24. Write the IUPAC Name
 - i) K₃[Cr(C₂O₄)₃] · 3H₂O
 - ii)[Co(NH₃)₆]Cl₃
 - iii) Na₂[Ni(EDTA)]

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

25. What is blister copper?
 26. How is Borax prepared from colemanite.
 27. Explain why Cr^{2+} strongly reducing while Mn^{2+} is strongly oxidizing.
 28. In an tetrahedral crystal field draw the figure to show splitting of d - orbitals.
 29. Explain the function of $\text{H}_2 - \text{O}_2$ fuel cell.
 30. State Saytzeff's rule?
 31. Consider the oxidation of nitric oxide to form of NO_2
 a) Express the rate of reaction
 b) O_2 is 0.2 Mol Lit^{-1} at what rate is NO_2 increasing at that instant.
 32. Explain the reduction of Nitro methane in different medium. i) strong acid medium ii) neutral medium
 33. Write the structure of $\alpha - D (+)$ glucopyranose

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

34. a) Write a note on magnetic separation.(3)
 b) What is the role of lime stone in the extraction of iron its oxide Fe_2O_3 .(2)
 (OR)
 c) What is Royal water.(3)
 d) There is only marginal difference in decrease in IE from Al to Th -explain why.(2)
 35. a) Calculate the number of unpaired electrons of $\text{Ti}^{3+}, \text{Mn}^{2+}$.(3)
 b) Describe the position of Lanthanides and Actinides in the periodic table.(2)
 (OR)
 c) Based on VBT Explain the nature of bonding in $[\text{CO} (\text{C}_2\text{O}_4)_3]^{3-}$.(3)
 d) What are metal carbonyls ? Explain the types.(2)
 36. a) Explain the types of crystalline solids.(5)
 (OR)
 b) Derive an expression for Ostwald's dilution law.(3)
 c) Explain the mercury button cell.(2)
 37. a) Explain Adsorption theory of catalysis.(3)
 b) Difference between homogeneous and heterogeneous catalysis?(2)
 (OR)
 c) How are the following conversions effected.(3)
 i) benzylchloride to benyl alcohol ii) benyl alcohol to benzoic acid
 d) Explain the mechanism of Aldol condensation.(2)
 38. a) What is esterification reaction?(2)
 b) How the following conversions are effected? (3)
 i) N-methyl aniline \rightarrow N-Nitroso methyl phenyl amine ii) Aniline \rightarrow 2,4,6,tribromo aniline
 iii) Aniline \rightarrow S-diphenyl thio urea
 (OR)
 c) Explain the structure of Glucose.(3)
 d) How will you prepare following compounds.
 i) orlon(PAN) ii) neoprene.(2)

“உன்னால் முடியும் என்று எண்ணுவதையோ அல்லது முடியும் என்று கனவு காண்பதையோ துணிந்து தொடங்கு. உனது துணிவிலேயே அறிவும், ஆற்றலும், மந்திரமும் அடங்கியுள்ளன”.

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