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|--------|---|--|-----------------------------|--|--|--|
| Tsi12C | Tenkasi Distri Common Haif Yearly Exar | ct nination - 2023 | UUU | | | |
| 05. | bl-2024 Standard | | 70 | | | |
| | .00 Hours CHEMISTR Part - I | Y | Marks: 70 15x1=15 | | | |
| Note: | Answer all the questions. Choose th | ne best answer. | | | | |
| | Titanium is purified by | | - 4 | | | |
| | a) Mond process | b) Van-Arkel metho | | | | |
| | c) Zone refining | d) Electrolytic refir | ning | | | |
| 2) | General empirical formula of silicone is | $(\mathbf{D}, \mathbf{CO})$ | d) (RSiH) | | | |
| | a) (R_2SIO) b) $(RSIO)$ | c) (R ₂ CO) | u) (KSIII) | | | |
| 3) | Shape of XeOFe, is | c) linear | d) T-shaped | | | |
| | a) square pyramidal b) pryramidal | the magnetic mor | ment of M2+ ions | | | |
| 4) | a) square pyramidal b) pryramidal c) miled Assertion : In any transition series the magnetic moment of M ²⁺ ions first increases and then decreases. | | | | | |
| 3 | | the number of un | paired electrons | | | |
| • 2 | in an and then decr | eases. | | | | |
| | a) If both assertion and reason are true | and reason is the c | orrect explantion | | | |
| | | | | | | |
| | b) If both assertion and reason are | true but reason is | not the correct | | | |
| | explanation of assertion | | | | | |
| | c) If assertion is true, but reason is fal | se, | | | | |
| . 3 | d) If both assertion and reason are fail | se se | | | | |
| 5) | is used as an antitumor drug in | b) Ca-EDTA | | | | |
| • | a) Sodium thio sulphate | d) Nickel chloride | | | | |
| | c) Cis-platin An example of covalent crystal is | | , | | | |
| | a) graphite (b) Sulphur | c) Diamond | d) rock salt | | | |
| 7) | If [A] is the concentration of A at any time | t and $[A_0]$ is the cond | centration at $t = 0$, | | | |
| | then for the first order reaction, the rate | equation can be writt | en as | | | |
| | | | | | | |
| , 1 | a) $k = \frac{2.303}{t} \log \left[\frac{A}{A_0}\right]$ | b) $k_t = \frac{2.303}{t} \log \left[\frac{A}{A}\right]$ | Ă. | | | |
| | γ, τ ² τ (1, 1, 0)] | L | , ר | | | |
| | 2.303 A A | 2.303 | \mathbf{A}_{0} | | | |
| • | c) $k_t = \frac{2.303}{t} \log \left[\frac{A_0}{[A_0] - [A]} \right]$ | d) $k_t = \frac{2.303}{t} \log \left[\frac{k_t}{1} \right]$ | Ā | | | |
| | | | | | | |
| 8) | Cl- is the conjugate base of | | | | | |
| | a) HClO ₄ b) HCl | c) ClO ₄ | d) HClO ₃ | | | |
| 9) | When one coulomb of electricity is pas | sed through an elec | ctrolytic solution, | | | |
| | the mass deposited on the | | | | | |
| | a) equivalent weight | b) molecular weigh | IC | | | |
| | c) electrochemical equivalent | d) one gram | n a liquid are | | | |
| 10) | Dispersion of a solid in a liquid, a liquid a) aerosol, emulsion, sol | b) Emulsion, sol, a | | | | |
| | c) Aerosol, sol, emulsion | d) Sol, aerosol, em | | | | |
| 11) | The preparation of glycerol and soap fr | | | | | |
| 11) | a) esterification | b) saponification | | | | |
| | c) hydroboration | d) trans esterificat | ion | | | |
| 12) | The acid which reduces Tollen's reager | | | | | |
| | a) acetic acid b) benzoic acid | c) formic acid | d) oxalic acid | | | |
| 13) | When aqueous solution of benzene dia: | zonium chloride is b | oiled the product | | | |
| | formed is | | | | | |
| | a) benzyl alcohol | b) phenol | I | | | |
| | c) benzene + N ₂ | d) Phenyl hydroxyla | - | | | |
| | Kindly send me your answer keys to us | - padasalai.net@gr | nall.com | | | |

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|--------|---|----------------------|--|
| Tsi12C | Among N. A.V. | 2 | |
| 14) | Among the following the achiral amino acid is | | |
| | a) 2-ethlyalanine | b) 2 - methylglycine | |
| 15) | c) 2-hydroxymethylserine | d) Tryptophan | |

15) If one strand of the DNA has the sequence 'ATGCTTGA', then the sequence of complementary strand would be
 a) TACGAACT
 b) TCCGAACT
 c) TACGTACT
 d) TACGRAGT

Part - II

6x2=12

6x3=18

SIVAKUMBR, M,

Soi Ram matoic Hss. Vallam-627809

Answer any 6 Questions in short. Q.No. 24 Is compulsory.

- 16) Name some common methods of ore concentration
- 17) What re silicones?
- 18) Mn²⁺, Fe³⁺ have high magnetic moment. Prove it.
- 19) Write the IUPAC name of the complex. a) [Fe(NH₃)₂(CN)₄]
 b) [Cr(NH₃)₃ (NC)₂(H₂O)]⁺
- 20) What is Schottky defect?
- 21) The reaction A + 2B \rightarrow C obeys the rate equation. Rate = K[A]^{1/2}[B]^{3/2} what is the order of the reaction?
- 22) Write the Henderson equation for Acidic and Basic buffer
- 23) Write Short note on SHE
- 24) How tereylene is prepared.

Part - III

Answer any 6 Questions in short. Q.No. 30 is compulsory.

- 25) Explain the following terms with suitable examples. i) Gangue ii) Slag
- 26) Differentiate lanthanides and actinides
- 27) What are interstitial compounds? Give their properties.
- 28) What are the limitations of VB Theory.
- 29) Sketch the (a) Simple cubic (b) face-centred cubic and (c) body centred cubic lattices.
- 30) A first order reaction is 20% completed in 10 minutes Calculate the time taken for the reaction to go to 80% completion
- 31) Explain Lucas test with examples.
- 32) Write short notes on Gomberg reaction.
- 33) What are Lipids? How is it classified?

Part - IV

| swer | all | the questions in brief. | 7 5x | 5=25 |
|------|--------------------------|---|---|--|
| 34) | a) | i) Explain froath floation process? | (3) | |
| | | ii) Explain mond's process | | (OR) |
| | b) | Write note on structure of diborane. | | |
| | | ii) Explain Fisher - Tropch synthesis. | | |
| 35) | a) | i) How will you prepare chlorine using Decon's process. | | |
| - | | ii) Give the uses of helium. | | (OR) |
| | b) | i) Calculate the packing efficiency of B.C.C | | () |
| | | ii) Write short note on solvate isomerism | (2) | * |
| 36) | a) | i) Based onVB theory explain why $[Cr(NH_3)_s]^{3+}$ is param | agnetic, | while |
| | | [Ni(CN) ₄] ²⁻ diamagnetic | | |
| | | ii) What is anisotropy | (2) | (OR) |
| | b) | i) Derive the relationship between half life period a | nd first | order |
| | | reaction. | | |
| | | ii) What is arhenius equation? | | |
| 37) | a) | i) Derive ostawld diution law | • • | |
| | - / | | • | (OR) |
| | b) | Explain the difference between physical and chemical ads | orption | (0.1) |
| 38) | | What is esterification reaction. Write the mechanism | o. perore | (OR) |
| | . : | | | () |
| | 34) 35) 36) 37) | 34) a) b) 35) a) b) 36) a) b) | 34) a) i) Explain rotation process? ii) Explain mond's process b) i) Write note on structure of diborane. ii) Explain Fisher - Tropch synthesis. 35) a) i) How will you prepare chlorine using Decon's process. ii) Give the uses of helium. b) i) Calculate the packing efficiency of B.C.C ii) Write short note on solvate isomerism 36) a) i) Based onVB theory explain why [Cr(NH₃)₆]³⁺ is param [Ni(CN)₄]²⁻ diamagnetic ii) What is anisotropy b) i) Derive the relationship between half life period at reaction. ii) What is arhenius equation? 37) a) i) Derive ostawld diution law ii) Explain buffer asction with examples. b) Explain the difference between physical and chemical ads 38) a) What is esterification reaction. Write the mechanism | 34) a) i) Explain froath floation process? ii) Explain mond's process b) i) Write note on structure of diborane. ii) Explain Fisher - Tropch synthesis. 35) a) i) How will you prepare chlorine using Decon's process. 35) a) i) How will you prepare chlorine using Decon's process. ii) Give the uses of helium. (2) b) i) Calculate the packing efficiency of B.C.C ii) Write short note on solvate isomerism ii) Write short note on solvate isomerism ii) Based onVB theory explain why [Cr(NH₃)₆]³⁺ is paramagnetic, [Ni(CN)₄]²⁻ diamagnetic ii) What is anisotropy b) i) Derive the relationship between half life period and first reaction. ii) What is arhenius equation? ii) Derive ostawld diution law ii) Explain buffer asction with examples. b) Explain the difference between physical and chemical adsorption 38) a) What is esterification reaction. Write the mechanism |

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