

Tsi12C

Tenkasi District



Common Quarterly Examination - 2024

27-09-2024

Standard 12

Time Allowed: 3.00 Hours

CHEMISTRY

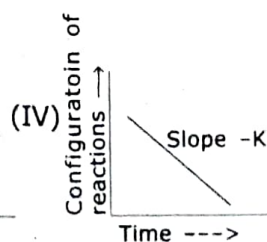
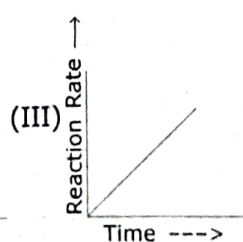
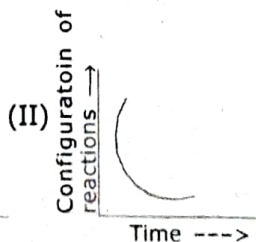
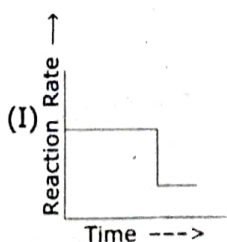
Maximum Marks: 70

PART - A

Answer all the questions in short:

15×1=15

- 1) $\text{Zn}_{(s)} + 2[\text{Au}(\text{CN})_2]^-_{(aq)} \rightarrow [\text{Zn}(\text{CN})_4]^{2-}_{(aq)} + 2\text{Au}_{(s)}$
In the above equation, the oxidation state of metallic gold is
a) 1 b) 0 c) +2 d) -2
- 2) Out of the ores given below, one is not a sulphide ore. Choose that ore.
a) galena b) zinc blende c) cinnabar d) bauxite
- 3) Choose the incorrect pair:
a) McA fee process - AlCl_3
b) Burnt alum - $\text{K}_2\text{SO}_4 \cdot \text{Al}_2(\text{SO}_4)_3$
c) Oxo process - Propanal
d) Fischer tropesch synthesis - HCOOH
- 4) Permanganate ion changes to _____ in acidic medium.
a) MnO_4^{2-} b) Mn^{2+} c) Mn^{3+} d) MnO_2
- 5) Read the given statements carefully and identify the incorrect statement(s):
i) HF does not attack glass
ii) H_3PO_3 has garlic taste
iii) PCl_5 has linear shape
a) only (ii) b) (i) and (iii) c) (ii) and (iii) d) (i), (ii) and (iii)
- 6) Equivalent weight of KMnO_4 in neutral medium is
a) 31.6 b) 52.67 *c) 158 d) 52.76
- 7) Which one of the following transition element has maximum oxidation states?
a) Manganese b) Copper c) Scandium d) Titanium
- 8) In a face centred cubic cell, an atom at the face contributes to the unit cell _____
a) $\frac{1}{4}$ part b) $\frac{1}{2}$ part c) $\frac{1}{8}$ part d) 1 part
- 9) The number of atoms in fcc unit cell is
a) 2 b) 4 c) 5 d) 6
- 10) Which one represent correct Arrhenius Ean?



a) I, II

b) I, III

c) I, IV

d) II, III

Tsi12P

2

11) Match the following: [Find the correct match]

Column - I

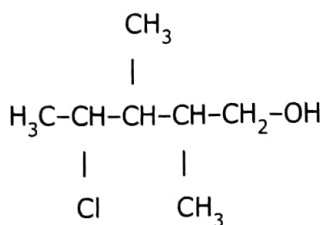
Column - II

- | | | |
|---------------------|---|--|
| A) Baeyer's reagent | - | 1. Conc. HCl+Anhydrous ZnCl ₂ |
| B) Lucas reagent | - | 2. FeSO ₄ + H ₂ O ₂ |
| C) Fenton's reagent | - | 3. Cold dilute alkaline KMnO ₄ |
| D) Grignard reagent | - | 4. R mgx |

12) pH of a saturated solution of Ca(OH)₂ is 9. The Solubility product (K_{sp}) of Ca(OH)₂

- a) 0.5×10^{-15} b) 0.25×10^{-10} c) 0.125×10^{-15} d) 0.5×10^{-10}

13) The correct IUPAC name of the compound,



- a) 4-chloro-2, 3-dimethyl pentan-1-ol
 b) 2, 3-dimethyl-4-chloropentan-1-ol
 c) 2, 3, 4-trimethyl-4-chlorobutan-1-ol
 d) 4-chloro-2, 3, 4-trimethyl pentan-1-ol

14) Name the product formed when phenol is heated with ammonia in the presence of anhydrous ZnCl₂.

- a) Benzene b) Aniline c) Anisole d) Phenyl acetate

15) Bakelite is a product of reaction between

- a) formaldehyde and NaOH b) phenol and methanal
 c) aniline and NaOH d) phenol and chloroform

PART - B

Answer any SIX questions in short:

6×2=12

16) Name the method used for the refining of (i) Nickel (ii) Zirconium.

17) What is smelting?

18) How does electronegativity vary from boron to thallium?

19) Give reason for the following:

Among the noble gases only Xenon is well known to form chemical compounds.

20) Write a note on Zeigler - Natta catalysis. Give its use.

21) What are line defects?

22) Why does the rate of any reaction generally decreases during the course of the reaction?

23) Explain 'esterification' reaction with an example.

24) Which compounds on Clemmenson reduction give 2-methyl propane?

Tsi12P

3

PART - C**Answer any SIX questions in short:****6×3=18**

- 25) Write note on Cyanide leaching.
- 26) There is only a marginal difference in decrease in Ionisation enthalpy from Aluminium to Thallium - Explain why?
- 27) Explain Decons process.
- 28) Write any three differences between Lanthanoids and Actinoids.
- 29) Calculate the packing efficiency of fcc. Crystal.
- 30) Classify each of the following solids as ionic, metallic, molecular, network (covalent) or amorphous.
- Tetra phosphorous decoxide (P_4O_{10})
 - Ammonium phosphate ($(NH_4)_3PO_4$)
 - SiC
 - I_2
 - P_4
 - Plastic
 - Graphite
 - Brass
- 31) A reaction is second order with respect to a reactant. How is the rate of reaction affected if the concentration of the reactant is (i) doubled (ii) reduced to half.
- 32) Write the dye test for phenol.
- 33) Write the uses of aldehyde.

SIVAKUMAR.M,
Sri Ram Matric HSS,
Vallam-622809
Tenkasi Dist.

PART - IV**Answer any 5 questions in brief:****5×5=25**

- 34) a) i) State the role of silica in the metallurgy of copper.
ii) Explain froth flotation.
- (OR)**
- b) i) Briefs outline the electronic configuration and oxidation state of 'p' block elements.
ii) Give uses of silicons.
- 35) a) i) Distinguish between diamond and graphite.
- (OR)**
- b) Write the structure of the following:
- | | |
|----------------------|------------------------|
| (i) Hyponitrous acid | (ii) Hydronitrous acid |
| (iii) Nitrous acid | (iv) Pernitrous acid |
- 36) a) Explain Frenkel and Schottky defect with diagram.
- (OR)**
- b) Derive Ostwald Dilution law.

Tsi12P

4

- 37) a) i) State the characteristics of order of reaction.
ii) What is pseudo first order reaction?

(OR)

b) Derive the integrated rate law 1st order reaction.

- 38) a) An organic compound 'A' is a sodium salt of phenolic acid with molecular formula $C_7H_5O_3Na$. 'A' on heating with soda lime gives compound 'B' of molecular formula C_6H_6O . 'B' gives violet colour with neutral ferric chloride. 'B' on treatment with C_6H_5COCl in the presence of NaOH gives an ester 'C'. Identify A, B and C. Explain the reactions.

(OR)

b) Explain the mechanism of Cannizzaro reaction.
