

COMMON QUARTERLY EXAM-2022

Standard - XII

CHEMISTRY

Time : 3.00 hrs

Marks : 70

Part - I

Answer all the questions:-

15×1=15

- 1) Which of the metal is extracted by Hall-Hersuit process
a) Al b) Ni c) Cu d) Zn
- 2) Which one of the element is not purified by Zone refining?
a) Si b) Ge c) Ga d) Sc
- 3) _____ is used to reduce NiO to Ni
a) Zn b) C c) CO+H₂ d) CO
- 4) Molecular formula of Potash alum
a) K₂SO₄.Al₂(SO₄)₃.6H₂O b) K₂SO₄.Al₂(SO₄)₃.24H₂O
c) K₂SO₄.Al₂(SO₄)₃.4Al(OH)₃ d) FeSO₄.(NH₄)₂SO₄.6H₂O
- 5) Which one is used as an antiseptic?
a) Borax b) Boran c) Boric acid d) Silicone
- 6) The compound used as smoke screen is
a) H₃PO₃ b) H₃PO₄ c) PH₃ d) P₂O₃
- 7) The actinoid elements which show the highest oxidation state of +7 are
a) Np, Pu, Am b) U, Pm, Th c) U, Th, Md d) Es, No, Lr
- 8) The vacant space in FCC lattice unit cell is
a) 48% b) 23% c) 32% d) 26%
- 9) All radio active disintegration reactions are
a) First order reaction b) Second order reaction
c) Zero order reaction d) Pseudo first order reaction
- 10) If the initial concentration of the reactant is doubled, the time for half-reaction is also doubled. Then the order of the reaction is
a) Zero b) One c) Fraction d) none
- 11) The P^H of 0.1M HCl is
a) 0 b) 1 c) 2 d) 7
- 12) Carbolic acid is
a) Phenol b) Picric acid c) Benzoic acid d) Phenyl acetic acid
- 13) Glycerol on oxidation with Bismuth nitrate gives
a) glycerose b) glyceric acid c) meso oxalic acid d) Oxalic acid
- 14) The acid that cannot be prepared from Grignard reagent is
a) Acetic acid b) Benzoic acid c) Formic acid d) All of these
- 15) Aldol is
a) 3-Hydroxybutanol b) 3-Hydroxy butanol c) But-3 enal d) Phenyl methanal

Part - II

Answer any six questions. (Questions No.23 is compulsory):-

6×2=12

- 16) Explain Van-Arkal process.

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- 17) What happens on heating boric acid?
- 18) Write chromyl chloride test?
- 19) In BCC crystal lattice corner atoms are x type and body centre atom is y type.
Find the formula of the compound.
- 20) Give two examples for Zero order reaction.
- 21) What are called buffer solutions? Mention the buffer present in blood.
- 22) What happens when glycerol is heated with KHSO_4 ?
- 23) Complete the following:- a) $\text{C}_6\text{H}_5\text{OCH}_3 + \text{HI} \rightarrow ?$ b) $\text{C}_2\text{H}_5\text{-O-CH}_3 + \text{HI} \rightarrow ?$
- 24) How is Urotrophine prepared? Mention its uses.

Part - III

Answer any six questions. (Q.No. 30 is compulsory)

6×3=18

- 25) How is silver refined by electrolysis?
- 26) H_2SO_4 is a powerful dehydrating agent. How? Give three examples.
- 27) Calculate the magnetic moment of a) Ti^{+3} b) Mn^{+2}
- 28) Explain any one stoichiometric defect.
- 29) Derive Henderson's equation.
- 30) Mention the order of the following:- a) Rusting of Iron
b) ${}_{92}\text{U}^{238} \rightarrow$ disintegration c) $2\text{A} + 3\text{B} \rightarrow \text{products}$ Rate = $k[\text{A}]^2[\text{B}]^2$
- 31) Write Victor-Meyer test for primary alcohol.
- 32) Write Rosenmunds reduction. What is the role of BaSO_4 ?
- 33) Mention the ester present in the following fruits.
a) Banana b) Pine apple c) Orange

Part - IV

Answer all the questions:-

5×5=25

- 34) a) Explain forth flotation process.
b) Give the limitations of Ellingham diagram. [or]
a) How is borate salt identified?
b) Write a brief note on Zeolites.
- 35) a) Give the general characteristics of Ionic Crystals.
b) Calculate the packing efficiency of BCC Crystal lattice. [or]
Derive an integrated rate constant equation for first order reaction. [or]
- 36) Derive Ostwald's dilution law.
a) What happens on heating $\text{K}_2\text{Cr}_2\text{O}_7$?
b) Compare Lanthanides and Actinides.
- 37) How is the following prepared from ethylene glycol?
a) Dioxan b) Acetaldehyde c) Ethylene [or]
How is the following prepared from phenol?
a) Azodye b) Picric acid c) Salicylic Acid
- 38) a) Discuss the mechanism of aldol condensation.
b) What is formalin? Mention its use. [or]
a) HCOOH reduces Tollens reagent but CH_3COOH does not - why?
b) Write the following reaction. i) HVZ reaction ii) Perkins reaction.
