

Vnr12C

Virudhunagar District
Common Quarterly Examination - 2024

Standard 12

CHEMISTRY

Time: 3.00 Hrs.

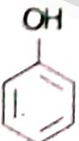
Marks: 70


Part - I

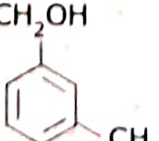
Answer all the questions:

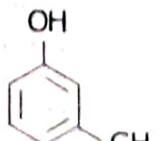
15×1=15

- 1) Considering Ellingham diagram which of the following is used to reduce alumina?
a) Fe b) Cu c) Mg d) Zn
- 2) In Jewellery which metal is mixed with gold?
a) Fe b) Ag c) Cu d) Pt
- 3) In diborane, the number of electrons that accounts for banana bonds is
a) six b) two c) four d) three
- 4) Among the following which one is not an icosagen
a) B b) Si c) Al d) Ga
- 5) P_4O_6 reacts with cold water to give
a) H_3PO_3 b) $H_4P_2O_7$ c) HPO_3 d) H_3PO_4
- 6) In given Transition metal ion series which series has all the metal ion in $3d^2$ electronic configuration
(Atomic number : Ti = 22, V = 23, Cr = 24, Mn = 25)
a) $Ti^{3+}, V^{2+}, Cr^{3+}, Mn^{4+}$ b) $Ti^+, V^{4+}, Cr^{6+}, Mn^{7+}$
c) $Ti^{4+}, V^{3+}, Cr^{2+}, Mn^{3+}$ d) $Ti^{2+}, V^{3+}, Cr^{4+}, Mn^{5+}$
- 7) Which of the following statements is not true?
a) on passing H_2S , through acidified $K_2Cr_2O_7$ solution, a milky colour is observed.
b) $Na_2Cr_2O_7$ is preferred over $K_2Cr_2O_7$ in volumetric analysis.
c) $K_2Cr_2O_7$ solution in acidic medium is orange in colour.
d) $K_2Cr_2O_7$ solution becomes yellow on increasing the pH beyond 7.
- 8) The radius of an atom is 300 pm, if it crystallizes in a face centered cubic lattice, the length of the edge of the unit cell is
a) 488.5 pm b) 848.5 pm c) 884.5 pm d) 484.5 pm
- 9) The yellow colour in NaCl crystal is due to
a) excitation of electrons in F centers
b) reflection of light from Cl^- ion on the surface
c) refraction of light from Na^+ ion
d) all of the above
- 10) What is the order of the radio active disintegration of ${}_{92}U^{238}$
a) one b) zero c) two d) three
- 11) Which one of these is not likely to act as Lewis base?
a) BF_3 b) PF_3 c) CO d) F^-
- 12) Which of the followings is aromatic alcohol?


(I)


(II)


(III)


(IV)
- 13) The formation of cyanohydrin from acetone is an example of
a) nucleophilic substitution b) electrophilic substitution
c) electrophilic addition d) nucleophilic addition
- 14) pH of 0.1M HCl is
a) 0 b) 1 c) 2 d) 7
- 15) Which compound does not react with 2, 4 - dinitrophenyl hydrazine?
a) acetone b) acetaldehyde c) CH_3OH d) $CH_3CH_2COCH_3$

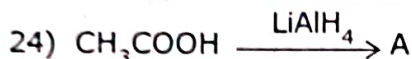
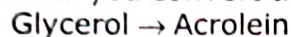
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Part - II

Note: Answer any six questions. Question Number 24 is compulsory. 6×2=12

- 16) What is liquation?
- 17) Give any two uses of silicones.
- 18) Why fluorine is more reactive than other halogens?
- 19) Why transition elements form co-ordination complexes?
- 20) Write Brag's law.
- 21) Define Activation energy.
- 22) What are acids and bases based on Arrhenius concept?
- 23) How will you convert the following:



Find A, B

Part - III

Note: Answer any six questions. Question Number 33 is compulsory. 6×3=18

- 25) What is Ellingham diagram? Give the limitations of Ellingham diagram.
- 26) What is catenation? What are the necessary conditions for catenation?
- 27) Write the uses of Helium.
- 28) Write the chromyl chloride test.
- 29) Distinguish tetrahedral and octahedral voids.
- 30) The rate constant for a first order reaction is $1.54 \times 10^{-3} \text{S}^{-1}$. Calculate its half life time.
- 31) Compound (A) having a molecular formula $\text{C}_2\text{H}_6\text{O}$ reacts with conc. $\text{H}_2\text{SO}_4/443\text{K}$ gives (B), compound (B) further reacts with Baeyers reagent gives compound (C). Find A, B, C.
- 32) How will you prepare malachite green dye?
- 33) Write the solubility product equation of Hg_2Cl_2 .

Part - IV

Answer all the questions:**5×5=25**

- 34) a) i) Explain magnetic separation method.
ii) Write the uses of zinc.
(OR)
b) i) Write the uses of Borax.
ii) Explain Mc Afee process.
- 35) a) i) Write equations for Electrolytic process of chlorine manufacturing in large scale.
ii) What are inter halogen compounds?
(OR)
b) Write differences between Lanthanoids and Actinoids.
- 36) a) Write short notes about any two Non-Stoichiometric defects.
(OR)
b) i) Define molecularity.
ii) Derive the integrated rate law equation for zero order reaction.
- 37) a) Derive the Henderson hasselbalch equation for pH and pOH.
(OR)
b) How will you differentiate 1° , 2° , 3° alcohols by Victor Meyer's method?
- 38) a) Explain the reaction mechanism of Cannizzaro reaction.
(OR)
b) Write short notes on:
(i) Haloform reaction
(ii) Wolf-Kishner reaction
(iii) Clemmenson reduction