

V12C

Virudhunagar District Schools  
Common First Mid Term Test - 2023Standard 12  
CHEMISTRY

Marks: 50

Time: 1.30 Hrs.

## PART - A

10×1=10

Choose the correct answer:

- The metal oxide which cannot be reduced to metal by carbon is  
a)  $P_6O$                       b)  $Al_2O_3$                       c)  $ZnO$                       d)  $FeO$
- Electrochemical process is used to extract  
a) Iron                      b) Lead                      c) Sodium                      d) Silver
- An aqueous solution of borax is  
a) neutral                      b) acidic                      c) basic                      d) amphoteric
- The basic structural unit of silicates is  
a)  $(SiO_3)^{-2}$                       b)  $(SiO_4)^{-2}$                       c)  $(SiO)^{-}$                       d)  $(SiO_4)^{4-}$
- Most easily liquefiable gas is  
a) Ar                      b) Ne                      c) He                      d) Kr
- The fraction of total volume occupied by the atoms in a simple cube is  
a)  $\frac{\pi}{4\sqrt{2}}$                       b)  $\frac{\pi}{6}$                       c)  $\frac{\pi}{4}$                       d)  $\frac{\pi}{3\sqrt{2}}$
- Coordination number of zinc in zinc blende is  
a) 6                      b) 4                      c) 8                      d) 12
- In a first order reaction  $x \rightarrow y$ . If  $k$  is the rate constant and the initial concentration of the reactant  $x$  is 0.1M then, the half life is  
a)  $\frac{\log z}{k}$                       b)  $\frac{0.693}{(0.1)k}$                       c)  $\left(\frac{\ln z}{k}\right)$                       d) none of these
- Rate of the reaction is directly proportional to  
a) temperature                      b) surface area  
c) both a and b                      d) none of these
- Which one of the following will react with phenol to give salicylaldehyde after hydrolysis?  
a) Dichloromethane                      b) Trichloroethane  
c) Trichloromethane                      d)  $CO_2$

## PART - B

Answer any SIX questions: [Q.No. 16 is compulsory]

6×2=12

- What are the differences between minerals and ores?
- How is thorium prepared from thoria?
- How will you identify borate radical?
- What are interhalogen compounds? Give examples.
- Define Unit cell.
- Sodium metal crystallizes in bcc structure with the edge length of the unit cell  $4.3 \times 10^{-8}$  cm. Calculate the radius of sodium atom.

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- 17) Write Arrhenius equation and explain the terms involved.
  - 18) Give two examples for zero order reaction.
  - 19) How will you convert aniline into phenol?

**PART - C****Answer any SIX questions: [Q.No. 26 is compulsory]****6×3=18**

- 20) Mention the uses of zinc.
- 21) Write about acid leaching.
- 22) Write a short note on anomalous properties of the first element of p-block.
- 23) Give a test for sulphate.
- 24) Explain Frenkel defect.
- 25) Explain about ABABAB type of packing with neat diagram.
- 26) The rate constant for a first order reaction is  $1.54 \times 10^{-3} \text{ s}^{-1}$ . Calculate its half life time.
- 27) What is pseudo first order reaction? Give an example.
- 28) How will you prepare ethylacetate from diethyl ether?

**PART - D****Answer ALL the questions:****2×5=10**

- 29) a) Explain the principle of electrolytic refining with an example.

**(OR)**

- b) i) Write a short note on hydroboration.  
ii) How is phosphine prepared from white phosphorus?
- 30) a) Differentiate amorphous and crystalline solids.

**(OR)**

- b) i) How do concentrations of the reactant influence the rate of reaction?  
ii) Write about esterification reaction.
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