

## COMMON FIRST MID TERM TEST - 2023

A

Standard XII  
CHEMISTRYReg No 

Time : 1.30 hrs

Part - I

Marks : 50

10 x 1 = 10

I. Choose the correct answer:

- Wolframite ore is separated from tinstone by the process of
  - smelting
  - calcination
  - electromagnetic separation
  - roasting
- Which of the following plot gives Ellingham diagram?
  - $\Delta G^\circ$  Vs T
  - $\Delta G^\circ$  Vs  $\frac{1}{T}$
  - $\Delta G^\circ$  Vs  $T^2$
  - $\Delta S$  Vs T
- Which of the following is  $sp^3$  hybridised?
  - diamond
  - graphene
  - fullerene
  - graphite
- Assertion :  $^{11}\text{B}_5$  isotope is used as moderator in nuclear reactors.  
Reason : Boron has the capacity to absorb neutrons.
  - both assertion and reason are true and reason is the correct explanation of assertion
  - both assertion and reason are true, but reason is not the correct explanation of assertion
  - assertion is false, but reason is true
  - both assertion and reason are false
- $\text{SiO}_2$  is an example of
  - covalent solid
  - metallic solid
  - molecular solid
  - ionic solid
- The yellow colour in NaCl crystal is due to
  - refraction of light from  $\text{Na}^+$  ion
  - reflection of light from  $\text{Cl}^-$  ion on the surface.
  - excitation of electrons in F centres
  - all of the above
- If 75% of a first order reaction was completed in 90 minutes, 50% of the same reaction under same conditions would be completed in
  - 20 minutes
  - 30 minutes
  - 45 minutes
  - 75 minutes
- Factor/s affecting the rate of the reaction is / are
  - nature of the reactant
  - concentration of the reactant
  - temperature of the reaction
  - all of these
- Which one of the following is more acidic?
  - $3^\circ$  - butyl alcohol
  - $2^\circ$  - butyl alcohol
  - n - butyl alcohol
  - Iso butyl alcohol
- Cumene on air oxidation in the presence of dilute acid gives
  - $\text{C}_6\text{H}_5\text{COOH}$
  - $\text{C}_6\text{H}_5\text{OH}$
  - $\text{CH}_3\text{COCH}_3$
  - 1, 3
  - 2 only
  - 2, 3
  - 1, 2, 3

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## XII Chemistry

(2)  
Part - II

5 x 2 = 10

- II. Answer any 5 questions. (Q.No.17 is compulsory)
11. What are the various steps involved in the extraction of pure metals from their ores?
  12. How copper matte is formed?
  13. Give the uses of Borax.
  14. Distinguish tetrahedral and octahedral voids.
  15. Write a note on Frenkel defect.
  16. Explain pseudo first order reaction with an example.
  17. Write the equation when ter-butyl methyl ether allowed to react with 1 mole of HI.

Part - III

5 x 3 = 15

- III. Answer any 5 questions. (Q.No.24 is compulsory)
18. Describe a method for refining Nickel.
  19. Describe the structure of diborane.
  20. Explain McAfee process.
  21. Distinguish between order and molecularity.
  22. How acrolein is prepared?
  23. What is the major product obtained when 2,3-dimethyl pentan-3-ol is heated in the presence of  $H_2SO_4$
  24. Calculate the percentage efficiency of packing in case of face centred cubic crystal.

Part - IV

3 x 5 = 15

IV. Answer all the questions.

25. a) Explain Froth flotation process.

(OR)

- b) i) Write the preparation of Borazole.  
ii) Write short note on Zeolites.

26. a) i) Differentiate crystalline solids and amorphous solids.  
ii) Explain briefly seven types of unit cell.

(OR)

- b) Derive integrated rate law for a first order reaction.

27. a) i) A zero order reaction is 20% complete in 20 minutes. Calculate the value of rate constant. In what time will the reaction be 80% complete?  
ii) Write Arrhenius equation and explain it.

(OR)

- b) i) Explain Swern Oxidation reaction with an example.  
ii) Write Kolbe's reaction.

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