



Standard 12

CHEMISTRY

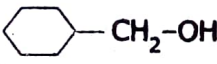
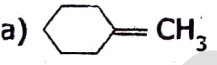

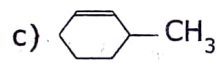
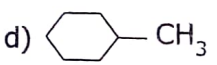
Time: 1.30 Hrs.

Marks: 35

PART - I

I. Choose the correct answer:

10×1=10

- 1) Which of the metal is extracted by Hall-Heroult process?
a) Al b) Ni c) Cu d) Zn
- 2) Leaching process is a _____.
a) Reduction b) Dehydration
c) Redon reaction d) Dehydrogenation
- 3) Duralumin is an alloy of
a) Cu, Mn b) Cu, Al, Mg c) Al, Mn d) Al, Cu, Mn, Mg
- 4) $\text{CO}_2 + \text{H}_2\text{O} \rightleftharpoons$
a) $\text{H}_2\text{O} + \text{CO}$ b) H_2CO_3 c) CO_2 d) H_2O_2
- 5) The composition of a sample of Wurzite is $\text{Fe}_{0.93}\text{O}_{1.00}$ what % of Iron present in the form of Fe^{3+}
a) 16.05% b) 15.05% c) 18.05% d) 17.05%
- 6) The crystal structure of cscl is _____.
a) Simple cubic b) Face centred cubic
c) Tetragonal d) Body centred cubic
- 7) The addition of a catalyst during a chemical reaction alters which of the following quantities?
a) Enthalpy b) Activation energy
c) Entropy d) Internal energy
- 8) The rate constant of a reaction is $5.8 \times 10^{-2} \text{S}^{-1}$. The order of the reaction is
a) First order b) Zero order c) Second order d) Third order
- 9)  on treatment with $\text{Con H}_2\text{SO}_4$, predominately gives
a)  b)  c)  d) 
- 10) Carbolic acid is _____.
a) Phenol b) Picric acid c) Benzoic acid d) Phenyl acetic acid

PART - II

II. Answer any three questions. Q.No. 15 is compulsory:

3×2=6

- 11) What are the differences between minerals and ores?
- 12) Give one example for each of the following:
(i) Prictogen (ii) Chalcogen
- 13) Classify the following solids:
(a) Brass (b) Iodine

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- 14) Calculate the number of atoms in a FCC.
 15) Show that for a first order reaction half life is independent of initial concentration.

PART - III**III. Answer any three questions. Q.no. 19 is compulsory:** 3×3=9

- 16) Explain Aluminothermic process.
 17) A double salt which contains fourth period alkali metal (A) on heating at 500K gives (B) aqueous solution of (B) gives white precipitate with BaCl_2 and gives a red colour compound with alizarin. Identify A and B.
 18) Write a note on Frenkel defect.
 19) Sodium metal crystallizes in bcc structure with the edge length of the unit cell 4.3×10^{-8} cm. Calculate the radius of sodium atom.
 20) Derive the rate constant for first order reaction.

PART - IV**IV. Answer the following questions:** 2×5=10

- 21) a) i) Write a short note on electrochemical principles of metallurgy.
 ii) Give the limitations of Ellingham diagram.

(OR)

- b) i) Write note on Fullerence.
 ii) What is burnt alum?

- 22) a) i) The activation energy of a reaction is $22.5 \text{ K cal mol}^{-1}$ and the value of rate constant at 40°C is $1.8 \times 10^{-8} \text{ S}^{-1}$. Calculate the frequency factor A.
 ii) Difference between rate and rate constant.

(OR)

- b) i) Explain Kolbe's reaction.

