

SECOND PUC PREPARATORY EXAMINATION - 2020

Time : 3 Hrs. 15 Mins.

CHEMISTRY (34)

Max Marks : 70

No. of Pages : 02

Total No. of Ques. : 37

Instructions :

1. The question paper has four parts A, B, C & D. All parts are compulsory.
2. Part-A carries 10 marks. Each question carries 1 mark.
Part-B carries 10 marks. Each question carries 2 marks.
Part-C carries 15 marks. Each question carries 3 marks.
Part-D carries 35 marks. Each question carries 5 marks.
3. Write balanced chemical equations and draw labelled diagrams wherever necessary.
4. Use log tables and simple calculator if necessary. (Use of Scientific Calculator is not allowed)

PART - A**I Answer ALL the questions, Each question carries ONE mark. 10x1=10**

- 1) At a given temperature and pressure nitrogen gas is more soluble in water than helium gas. Which one of them has higher value of K_H ?
- 2) On mixing equal volumes of acetone and ethanol, what type of deviation from Raoult's law is expected ?
- 3) What happens to molar conductivity when one mole of KCl dissolved in one litre is diluted to 5 litres ?
- 4) What happens to the $t_{1/2}$ of a 1st order reaction, if the initial concentration of the reactants is increased ?
- 5) Name the process usually employed for the purification of Nickel.
- 6) Name most abundant noble gas in earth atmosphere.
- 7) How many moles of AgCl will be precipitated when an excess of AgNO₃ solution is added to 1 molar solution of $[\text{CrCl}(\text{H}_2\text{O}_5)\text{Cl}]_2$?
- 8) Name the organic product formed when chlorobenzene is treated with sodium in dry ether.
- 9) $\text{C}_6\text{H}_5\text{COCl} \xrightarrow[\text{Pd}+\text{BaSO}_4]{\text{H}_2} \text{C}_6\text{H}_5\text{CHO}$. Name the reaction.
- 10) Deficiency of which vitamin causes the disease pernicious anaemia ?

PART - B**II Answer any FIVE of the following. Each question carries TWO marks. 5x2=10**

- 11) What is meant by the term coordination number in solids ? What is the coordination number in a face centered cubic close packing structure ?
- 12) State Faraday's first law of electrolysis. For the electrode reaction $\text{Zn}_{(\text{aq})}^{2+} + 2\text{e}^- \rightarrow \text{Zn}(\text{s})$ what quantity of electricity in coulombs is required to deposit one mole of zinc ?
- 13) A reaction is first order with respect to the reactant A and second order with respect to the reactant B in reaction $\text{A} + \text{B} \rightarrow \text{product}$.
a) Write the differential rate equation.
b) How is rate of reaction affected on increasing the concentration of B by two times ?
- 14) Give any two differences between lanthanoids and actinoids.
- 15) Name the product formed when phenol is treated with acidified solution of Na₂Cr₂O₇. Give equation.
- 16) Identify A and B in the following reaction : $2\text{C}_6\text{H}_5\text{CHO} + \text{Conc. NaOH} \rightarrow \text{A} + \text{B}$.
- 17) What is the role of these as food additives ? i) Sodium benzoate ii) Aspartame.
- 18) Explain saponification of oils/fats with equation.

PART - C**III Answer any FIVE of the following. Each question carries THREE marks. 5x3=15**

- 19) Describe the three steps involved in the leaching of bauxite to get pure Alumina.
- 20) Write the equations involved in the preparation of nitric acid by Ostwald's process by maintaining the reaction conditions.
- 21) Complete the following equations :
i) $\text{CH}_4 + 2\text{O}_2 \longrightarrow$
ii) $2\text{Fe}^{2+} + \text{SO}_2 + 2\text{H}_2\text{O} \longrightarrow$
iii) $\text{C}_{12}\text{H}_{22}\text{O}_{11} \xrightarrow{\text{Conc. H}_2\text{SO}_4}$

(1+1+1)
(P.T.O.)

