E–2–A

Roll No. .....

Total No. of Questions : **28**]

[Total No. of Printed Pages : **7**

XIIAPBIAJKLK23

9802–A

CHEMISTRY

Time : 3 Hours]

[Maximum Marks : 70

Section–A

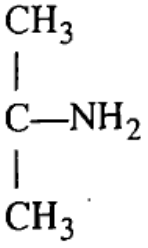
1 each

(Very Short Answer Type Questions)

1. What is body centred cubic ?

2. The zig-zag motion of colloidal particles is called .....

3. $CH_3–CH_2–OH \xrightarrow{Cu/573K}$ CH_3CHO + H_2

4.  is a primary amine. (True/False)

5. Write IUPAC name of $K_3[Fe(C_2O_4)_3]$.

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6. The disaccharide present in milk is :

(A) Sucrose

(B) Maltose

(C) Lactose

(D) Cellobiose

7. Silver mirror is a test for :

(A) Aldehydes

(B) Thioalcohols

(C) Acids

(D) Ethers

Section–B

2 each

(Short Answer Type Questions–I)

8. What is Salt Bridge ? What is it used for ?

9. Calculate half life of a first\order reaction where the specific rate constant is :

(a) 200 s^{-1}

(b) 2 min^{-1}

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10. What are Transition Metals ? Which *d*-block elements are not considered as transition metals ? Why ?

Or

Transition metals have high melting and boiling points. Explain.

11. Define with one example the following :

(A) Complex ion

(B) Ligand

(C) Coordination number

(D) Oxidation State

Or

Define cis and trans isomers. Draw the cis and trans isomers of $[Co(NH_3)_4Cl_2]^+$ ion.

12. Explain as to why haloarenes are much less reactive than haloalkanes towards nucleophilic substitution reactions ?

13. Write short note along with reaction on Friedel-Crafts reaction.

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Section–C

3 each

(Short Answer Type Questions–II)

14. What are Stoichiometric defects in solids ? Explain Frenkel defect in ionic solids. What are the consequences of this defect in solids ?

15. Draw a neat and well labelled diagram of a dry cell. Is it really dry ? Give reactions taking place at anode and cathode.

16. Briefly explain the effect of temperature on the rate constant of a reaction. https://www.jkboseonline.com

17. Define Gold number. How is it related to protective power of a colloid ?

18. Give a brief account of calcination and roasting.

19. Explain why acidic strength of oxo acids of halogens decreases while increasing the atomic number of elements.

20. What is lanthanide contraction ? What are its causes and consequences ?

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21. What happens when : (Give reactions only)

(i) Phenol is heated with excess of concentrated nitric acid in presence of concentrated H_2SO_4

(ii) Phenol reacts with bromine in aqueous medium

22. Illustrate the following reactions giving suitable examples in each case :

(i) Diazotisation reactions

(ii) Coupling reactions

Or

How is aniline prepared from nitrobenzene ? How will you convert aniline into (i) Benzonitrile (ii) Acetanilide ?

23. State the significance of primary and secondary structures of proteins.

Or

What are Vitamins ? Give three examples which vitamins are fat soluble and which are water soluble ? What is the importance of vitamin A and D ?

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24. What are Polymers ? How are they classified on the basis of structure ?

Or

How is Bakelite prepared ? What are its major uses ?

25. What are Antibiotics ? Name *two* antibiotics which are specific for certain diseases.

Or

Explain Cleansing action of soap.

Section–D 5 each

(Long Answer Type Questions)

26. Illustrate with the help of diagrams different types of non-ideal solutions. Explain the reasons for negative and positive deviations.

Or

What do you mean by abnormal molecular mass ? Explain the factors with suitable examples which bring about the abnormality.

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27. Discuss the process of manufacture of ammonia by Habers process. Draw the flow chart diagram for the process.

Or

Briefly describe the various allotropic forms of phosphorous. Also give method of preparation of phosphine.

28. How is acetaldehyde prepared from (i) Ethanol (ii) Acetic acid (iii) Acetylene ? Give reactions of acetaldehyde with :

(a) $NaHSO_3$

(b) HCN

(c) CH_3MgBr

Or

Describe the following reactions :

(a) Aldol condensation

(b) Cannizzaro reaction

(c) Rosenmuds reaction

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