

A-2-A

Roll No.....

Total No. of Questions : 28]

[Total No. of Printed Pages : 7

12thSZARJD22**6002-A****CHEMISTRY**

Time : 2.30 Hours]

[Maximum Marks : 70

Section-A

1 each

(Very Short Answer Type Questions)

1. What happens when a negatively charged colloidal sol is added to a positively charged colloidal sol ?
2. The IUPAC name of $[\text{Co}(\text{en})_3\text{Cl}_3]$ is
3. $\text{CH}_3-\text{CH}=\text{CH}_2 + \text{HBr} \xrightarrow{\text{No peroxide}} \text{CH}_3-\text{CH}_2-\text{CH}_2\text{Br}$,
is the major product. (True/False)
4. Arrange HCl, HBr and HI in the decreasing order of reactivity with alcohols.
5. Write IUPAC name of $\text{OHC}-\text{CH}_2-\underset{\text{CHO}}{\text{CH}}-\text{CHO}$.

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Turn Over

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6. Choose the correct answer :

Benzamide on treatment with POCl_3 gives :

- (A) Aniline
- (B) Benzonitrile
- (C) Chlorobenzene
- (D) Benzylamine

7. Give an example of Anomers.

Section-B

2 each

(Short Answer Type Questions-I)

- 8. What do you mean by Frenkel defect ?
- 9. What is Piezoelectricity ? Give one example of such solid.
- 10. What is equivalent conductivity ? Give its units.

Or

What is Secondary Cell ? Give one example.

- 11. What is meant by the terms average and instantaneous rates of reaction ? How are they expressed ?

Or

Define Rate Law.

(3)

12. Transition metals have ability to form alloys. Give reason.
13. Define Ionisation Isomerism in coordination compounds. Give *one* example.

Section-C

3 each

(Short Answer Type Questions-II)

14. Define Corrosion. Explain electrical protection for protecting iron from corrosion.
15. Define First Order Reaction. Derive rate equation for first order reaction. <https://www.jkboseonline.com>
16. What is Brownian Movement ? What is its cause and significance ?
17. Give a brief account of calcination and roasting.
18. Why does nitrogen differ from rest of the members of group 15 ?
Give *three* points of difference.
19. Explain, why haloarenes are much less reactive than haloalkanes towards nucleophilic substitution ?

20. Define and classify Vitamins. What is the role of Vitamin C in our daily life ? Give its sources.
21. What is Lanthanide contraction ? Give its causes.
22. How is phenol obtained from chlorobenzene and benzene diazonium chloride ? How phenol reacts with :
- (i) $\text{CHCl}_3 + \text{NaOH}$ at 340K
 - (ii) Conc. H_2SO_4 at 375K ?

Or

How can you prepare ethyl alcohol from :

- (a) Ethene
- (b) Ethyl bromide ?

How can you convert ethyl alcohol to :

- (i) Acetaldehyde
- (ii) Diethyl ether ?

23. Why are amines basic ? Compare basic strength of ammonia, ethylamine and diethylamine.

(5)

Or

How will you prepare ethylamine by using Hofmann bromide reaction and how will you convert ethylamine to ethylisocyanide ?

24. Give preparation and uses of Nylon-66 and Terylene.

Or

Explain the term co-polymerisation and give its *two* examples.

25. What are Tranquilizers ? Give *two* examples.

Or

What are Antibiotics ? Give *two* examples.

Section-D

5 each

(Long Answer Type Questions)

26. Define the term Osmotic pressure. Describe how molecular mass of a substance can be determined on the basis of osmotic pressure. 200 cm³ of an aqueous solution of a protein contains 1.26 g of the protein. The osmotic pressure of such solution at 300K is found to be 2.57×10^{-3} bar. Calculate molecular mass of the protein.

(6)

Or

Define the following :

- (i) Molarity
- (ii) Molality
- (iii) Mole fraction

Concentrated nitric acid in laboratory work is 68% nitric acid by mass in aqueous solution. What should be the molarity of such a sample of the acid if the density of the solution is 1.504 gmL^{-1} ?

27. What are Interhalogen Compounds ? How are they classified ? Give the structure and mention the hybridisation of central atom of the following :

- (a) IF_7
- (b) BrF_3
- (c) BrF_5

Or

Describe the manufacture of sulphuric acid by contact process.

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28. Describe the following reactions :

- (a) Aldol condensation
- (b) Cannizzaro reaction
- (c) Rosunmund's reaction

Or

How is acetic acid prepared from :

- (i) Acetylene
- (ii) Ethyl alcohol
- (iii) Acetamide ?

How does acetic acid react with :

- (i) Cl_2 in presence of phosphorus
- (ii) Methanol in presence of H_2SO_4 ?

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