

D-2-X

Roll No.....

Total No. of Questions : 21]

[Total No. of Printed Pages : 4

12thRKDO18

20302-X

CHEMISTRY

[Maximum Marks : 70

Time : 3 Hours]

(Long Answer Type Questions)

5 each

1. What is depression in freezing point ? Derive the relationship between depression in freezing point and molar mass of solute.

Or

What is Van't Hoff factor ? How is it related to degree of dissociation of the electrolyte in the solution ? What is its value when solute undergoes association ?

2. What is a fuel cell ? Give the construction and working of a fuel cell.

Or

What is Corrosion ? Explain electrochemical theory of rusting.

3. How is nitric acid prepared by Ostwalds process ? Briefly express the various steps involved in it. Give its reaction with zinc.

Or

Write the electronic configurations of the elements of Group-17. Why fluorine shows anomalous behaviour ? Discuss the oxidation states of the elements of Group-17.

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Turn Over

D-2-X

4. Give two methods of preparation of Acetic acid. How does it react with :

- (i) Cl_2 in presence of red phosphorus
- (ii) PCl_5
- (iii) $\text{C}_2\text{H}_5\text{OH}$?

Or

How acetone is prepared from :

- (i) Acid chloride
- (ii) Alkynes
- (iii) Calcium acetate ?

What happens when acetone is treated with :

- (i) Sodium bisulphite
- (ii) Grignard's reagent ?

(Short Answer Type Questions)

- 5. Explain Schottky defect in ionic crystals.
- 6. Differentiate between homogeneous and heterogeneous catalysis with *one* example of each.
- 7. Define the following terms with examples :
 - (i) Coordination complex
 - (ii) Bidentate ligand.
- 8. Define half-life period. Show that half-life period for 1st order reaction is independent of the initial concentration of the reactants.

9. What are Alcohols ? Explain primary, secondary and tertiary alcohols with examples.
10. What are transition elements ? Why are they called *d*-block elements ? Write the electronic configuration of the first and last member of 3*d* transition series. <https://www.jkboseonline.com>
11. What are Carbohydrates ? How are they classified ?
12. What is Allotropy ? Write the various allotropic forms of sulphur.

(Very Short Answer Type Questions)

2 each

13. Define order and molecularity of a reaction.
14. What is difference between mineral and ore ?
15. What do you mean by Lanthanide contraction ?
16. What is Fittig Reaction ?
17. How will you convert ethyl bromide into :
 - (i) Ethyl nitrite
 - (ii) Ethyl carbylamine
18. What is Diazotisation ? Give an example.
19. What are Antibiotics ? Name one broad spectrum antibiotic?
20. What are Polymers ? How are they classified on the basis of their source or origin ?

(Objective Type Questions)

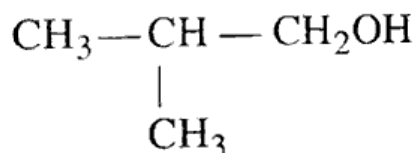
1 each

21. (i) Total number of atoms per unit cell in fcc is
- (ii) The adsorption of gases on the surface of metals is called

(iii) Benzene diazonium chloride reacts with to give benzene.

(iv) What is Roasting ?

(v) Write IUPAC name of :



(vi) Cannizzaro's reaction can be given by acetaldehyde.

(True/False)

(vii) Alkyldiazonium salts are very unstable.

(True/False)

(viii) Which of the following is an example of aldohexose ?

(a) Ribose

(b) Fructose

(c) Sucrose

(d) Glucose

(ix) Aspirin is an :

(a) Antimalarial

(b) Analgesic

(c) Antipyretic

(d) Both analgesic and antipyretic

(x) Which of the following is a copolymer ?

(a) Buna-S

(b) PVC

(c) Orlon

(d) Neoprene