

HSEIRKO - 13

81018-Q

CHEMISTRY

Section - A

(Long Answer Type Questions)

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

Or

Explain along with diagrams that why some of non-ideal solutions show positive deviations while some other show negative deviations from ideal solutions.

2. What do you mean by corrosion ? Describe the electrochemical theory of rusting of iron.

Or

What are secondary cells and fuel cells ? Describe H₂-O₂ fuel cell in detail

3. Write the electronic configurations of the elements of group-17 Why fluorine shows anomalous behaviour? Discuss Oxidation states of elements of group-7 <https://www.jkboseonline.com>

Or

Give preparation properties and uses of

(i) Phosphorus trichloride

(ii) Phosphorus Pentachloride

4. Give two methods of preparation of aldehydes Give the reactions on acetaldehyde with

(i) Grignard reagent

(ii) Glycol

(iii) Hydroxylamine

Or

Describe the following with the help of suitable chemical equations

(i) Kolbe's reaction

(ii) Etards's reaction

(iii) Rosenmund reaction

Section - B

(Short Answer Type Questions)

5. What is the difference Between crystalline and amorphous solids?

6. What is half-life period ? Show that half-life period for the first orde reaction is independent of the initial concentration. <https://www.jkboseonline.com>

7. Describe the following terms

(i) Brownian movement

(ii) Electrophoresis

8. What is lanthanide contraction? How is it caused ?

9. What are Ionisation Isomers ? Explain with suitable examples.

10. How will you convert ethyl bromide into

(i) Ethylnitrite

(ii) Ethylcarbylamine

(iii) Ethene

11. How primary secondary and tertiary alcohols can be obtained from Grignard reagent?

12. What are Proteins? How are they classified on the basis of molecular structure ?

Section -C

(Very Short Answer Type Questions)

13. Define order and molecularity of a reaction.

14. Define calcination Give an example.

15. Oxygen is a gas, while sulphur is a solid Explain

16. Why do transition elements exhibit variable oxidation states?

17. What are amines ? How are they classified ?

18. What is diazotization ? Give an example.

19. What are Polymers ? How are they classified on the basis of their source or origin?

20. Why are detergents preferred over soaps?

Section - D

(Objective Type Questions)

(i) Define Piezoelectricity

(ii) Order of a reaction increases with rise in temperature. (True/False)

(iii) in the colloidal state the particle size ranges. <https://www.jkboseonline.com>

(a) Below 1 nm

(b) Between 1 nm to 100 nm

(c) More than 100 nm

(d) None of the above

(iv) Which of the following is an ore of Aluminium?

(a) Na_3AlF_6

(b) $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$

(c) Al_2O_3

(d) $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$

(v) The C-X bond in haloarenes is more polar than C-X bond haloalkanes. (True False)

(vi) Phenols react with Sodium liberating gas (Fill in the blank)

(vii) Aldehydes are more easily oxidised than ketones (True/ False)

(viii) Which base is found only in the nucleotides of RNA?

(a) Adenine

(b) Uracil

(c) Guanine

(d) Cytosine

(ix) Natural rubber is a polymer of:

(a) Butadiene

(b) Ethylene

- (c) Styrene
- (d) Isoprene
- (x) Give the name of one broad spectrum antibiotic

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