11TH CHEMISTRY VOL – 2 NEW SYLLABUS

CHEMISTRY UNIT WISE IMPORTANT QUESTIONS(**BOOK BACK & INTERIOR**) **2 & 3 MARKS ONLY**

UNIT-8
Physical and chemical Equilibrium

1. State Le-chatelier Principle
2. State law of mass action
3. Explain how will you predict the direction of a equilibrium reaction.
4. Write the Vont hoff equation.
5. Write the Kp and Kc Relation. Give one example for which Kp is equal to Kc.
6. Write general expression for the equilibrium constant Kp and Kc for the reaction $3H_2(g) + N_2(g) \rightleftharpoons 2NH_3(g)$.
7. Define Reaction Quotient.
8. Write the effect of temperature equilibrium.
9. For the reaction $SrCO_3(s) \rightleftharpoons SrO(s) + CO_2(g)$, the value of equilibrium constant $K_P = 2.2 \times 10^{-4}$ at 1002 K. Calculate K_C for the reaction.
10. Give any three application of equilibrium constant.

UNIT-9
Solutions

1. Define (i) molality (ii) Normality
2. What is a vapour pressure of liquid? Or What is relative lowering of vapour pressure?
3. State and explain Henry's law
4. What is osmosis?
5. Define the term 'isotonic solution'.
6. State Raoult law.
7. Define the following concentration terms i) Formality ii) Mass percentage
   Iii) molarity
8. Define Concentration.
9. What is meant by PPM?
10. Give the advantages of using standard solution.
11. Compare the Raoults law with henry's law
12. Short note on Von't Hoff Factor
13. Note on Reverse Osmosis.
14. Give the reason behind the carbonated drinks are stored in a pressurized bottle.
15. Give the examples of Gaseous solutions.
16. Why acetic acid exist as a dimer?

UNIT-10
Chemical Bonding

1. What is dipolment?
2. Define the following
i) Bond order ii) Hybridisation
   iii) σ- bond
3. What is a pi bond?
4. What is Polar Covalent bond?
5. Describe fajan's rule.
6. Explain the covalent character in ionic bond.
7. Explain resonance with reference to carbonate ion?
8. Which one of the following has highest bond order? N_2, N_2^+ or N_2^-
9. Draw the Lewis structures for the following species.
   i) NO_3^- ii) SO_4^{2-} iii) HNO_3 iv) O_3
10. Explain Sp^2 hybridisation in BF_3
11. Which bond is stronger σ or π? Why?
12. Define bond energy.
13. Define Octet Rule.
14. Draw M.O diagram for the following
    H_2, Li_2, NO
15. Calculate the formal charge on each atom of carbonyl chloride $COCl_2$.
16. Write the resonance structure for
    i. Ozone molecule ii. N_2O

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UNIT-11
Fundamentals of Organic Reactions

1. Give the general characteristics of organic compounds?
2. Write a note on homologous series.
3. What is meant by a functional group? Identify the functional group in the following compounds.
   (a) acetaldehyde (b) oxalic acid
   (c) di methyl ether (d) methylamine
4. Give the general formula for the following classes of organic compounds
   (a) Aliphatic monohydric alcohol
   (b) Aliphatic ketones. (c) Aliphatic amines.
5. Write the molecular formula of the first six members of homologous series of nitro alkanes.
6. draw newman projection formula for D-threos.
7. draw fisher projection formula of tartaric acid.
8. Define Isomerism.
9. Give the IUPAC names of the following compounds.

i. CH_3-CH(-CH_3)-CH(-Br)-CH_3 ii. CH_3-C≡C-CH(-Cl)-CH_3

10.Short notes : a).paper chromatography
b) column chromatography.
11. Practice some compounds for IUPAC name and common name - book back Qns.
12.Explain Geometrical isomerism in alkene by considering 2-butene as an example.
13.How will you prepare Lassaigne's extract?
14. Define Chromatography

UNIT-12
Basic concepts of Organic Reactions

1. What are electrophiles and nucleophiles? Give example each.
2. State electromeric effect.
3. Note on inductive effect with suitable example.
4. Write short on i. Resonance ii. Hyper conjugation.
5. What is meant by +E amd _E effect?
6. Mention the different types of organic reactions?
7. What are addition reactions?
8. What is elimination reaction? Give example.
9. What are Oxidation and Reduction reactions?
10. Give any three points : differences between inductive effect and resonance effect?
11. When does Homolytic cleavage occurs?
12. What are Free Radicals?
13. Give examples for the following types of organic reactions
    (i) β - elimination
    (ii) electrophilic substitution.
14. Why does SO_3 act as an electrophile?

UNIT-13
Hydrocarbons

1. Write short notes on ortho, para directors in aromatic electrophilic substitution reactions.
2. How is propyne prepared from an alkyene dihalide ?
3. How does Huckel rule help to decide the aromatic character of a compound.
4. Suggest a simple chemical test to distinguish propane and propene.
5. What happens when isobutylene is treated with acidified potassium permanganate ?
6. How will you convert ethyl chloride in To i) ethane ii) n – butane
7. Explain Markow nikoff's rule with suitable example.
8. What happens when ethylene is passed through cold dilute alkaline potassium permanganate.
9. How will you prepare propane from a sodium salt of fatty acid ?
10. How will you distinguish 1 – butyne and 2 – butyne?
11. Write Sabatier senderesns reaction.
12. What is pyrolysis? Give example.
13. Write note on isomerisation reaction.
14. How to prepare cis and trans 2- butene From 2- butyne.
15. Write a test for alkene.
16. Complete the Reaction :
    CH_3-CH=CH_2 $\xrightarrow[(C_6H_5CO)O_2]{\text{peroxide}}$?

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UNIT-14
Haloalkanes and Haloarenes

1. How will you prepare n-propyl iodide from n-propyl Bromide?
2. Why is it necessary to avoid own traces of moisture during the use of Grignard reagent?
3. What happens when chloroform reacts with oxygen in the presence of sunlight.
4. Give any 3 possible isomers of $C_5H_{11}Br$. And give their IUPAC and common name.
5. What are freons?
6. Predict the products when Bromo ethane is treated with i) KNO_3 ii) $AgNO_3$.
7. Naming reaction: i) Dow's Process ii) Raschig Process
8. Write the preparation of DDT.
9. Complete the Reaction:

$CH_3\text{-}CH{=}CH_2$ + HBr $\xrightarrow{\text{peroxide}}$?

$CH_3\text{-}CH - Br$ + NaSH $\xrightarrow{\text{alcohol } /H_2O}$?

10. What is Hunsdicker Reaction?
11. How is TEL prepared from ethyl bromide?
12. What is finkelstein reaction?
13. Give swartz reaction.
14. Write a note on Gattermann and Sand meyer reaction.
15. What are haloalkanes ? give example.
16. What are haloarenes? Give example.
17. Give chlorination of methane.

UNIT-15
Environmental Chemistry

1. Define Smog.
2. Which is considered to the earth protective umbrella? Why?
3. What are degradable and non degradable pollutants?
4. From where does ozone come in the photo chemical smog?
5. What is green chemistry?
6. What is meant by global warming ?
7. What are particulate pollutants?
8. How is acid rain formed?
9. Difference between BOD and COD?
10. How will you protect our environment from pollution?
11. What is air pollution?
12. What are the techniques adopt to reduce particulate pollutants?
13. What is PAH?
14. What are ozone depletion substances?
15. Write the effects of photo chemical smog.
16. What is the impact of ozone depletion in the earth?
17. How is CFC's enters in to stratosphere.
18. What is the role of nitrogen oxides in the ozone depletion?
19. How will you control air pollution?
20. What are the necessary steps to control environmental pollutions in your local area?
21. How does classical smog differ from photochemical smog.

********SREE SARAVANA**********

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