GOVERNMENT CENTENNIAL MODEL SCHOOL BANNNU

SLOs QUESTION BANK OF CHEMISTRY CLASS 10TH TEST (I)

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CHAPTER 09 CHEMICAL EQUILIBRIUM

- 1. Differentiate between evaporation and condensation?
- 2. Differentiate between reactants and products?
- 3. What is static equilibrium state?
- 4. Explain equilibrium of water bw diff phases?

9.1 (Topic) Reversible Reaction & Dynamic equilibrium

- 5. Differentiate between irreversible reaction and reversible reaction?
- 6. What is dynamic equilibrium state?
- 7. Why the reversible reaction does not go to completion?
- 8. What is irreversible reaction? Give few characteristics of them?
- 9. What are the characteristics of a reaction that establishesequilibrium state at once?
- 10. Define a complete reaction?
- 11. How dynamic equilibrium is established?
- 12. Define equilibrium and its types?
- 13. Why rate of fwd rxn gradually decrease?
- 14. Why rate of reverse rxn gradually increases?
- 15. Explain slope of graph what does it represents?
- 16. Define active mass and how rate of reaction depends on it?
- 17. How kc depends on temperature?
- 18. Discuss dynamic equilibrium in general. List its two examples.
- 19. Elaborate dynamic equilibrium in case of vaporization and condensation of water?
- 20. What is the meaning of double headed arrow in reversible reaction?
- 21. Elaborate the graph obtained in reversible reaction?

- 22. List 4 examples of reversible and irreversible reaction?
- 23. Hydrogen and iodine reacts to form hydrogen iodide. After an instance equilibrium is attained. List the factors which can disturbits equilibrium?
- 24. Differentiate between forward and reverse reaction?
- 25. At equilibrium the ratio if reactants and products is constant. Justify?
- 26. Reversible reaction never attains completion. Why?
- 27. Indicate the forward and reverse reaction of the given reaction.

$$4HCl + O_2$$
 $2H_2O + 2Cl$

Chemical Equilibrium

- 28. Why at equilibrium state reaction does not stop?
- 29. Why equilibrium state is attainable from either way?
- 30. Define equilibrium state. Give possibilities at equilibrium state?
- 31. Define chemical equilibrium state?
- 32.

Conditions of Equilibrium

33. Why equilibrium state is attainable from either way?34.Which

physical factor effects the value of Kc? 35.Write down the necessary

condition of equilibrium?

- 36. Equilibrium is always attained in closed containers. Why?
- 37. Heating of calcium carbonate in open container can never bereversed. Why?
- 38. List some conditions which can disturb equilibrium of a reaction.
- 39. Elaborate the Birkland- Eyed process.
- 40. Discuss the formation of oleum and how it is useful in production f sulfuric acid?

Equilibrium Constant & its units

41. What is equilibrium constant?

42. Bromine chloride (BrCl) decompose to form bromine and chloride.

For this reaction write	a) chemical equation	b) kc
expression	c) unite of kc	

- 43. Briefly discuss that change in concentration of reactants and products will disturb equilibrium?
- 44. Prove that kc has no unit for a reaction in which concentration of reactant and product is same?
- 45. In which case kc has no unite?
- 46. Define catalyst and discuss the effect of catalyst on chemicalequilibrium?
- 47. Discuss the effect of change in pressure of chemical equilibrium?
- 48. Represent the kc equation in figure form.
- 49. List the steps while writing the Kc expression for a reaction.
- 50. What will be the unit of Kc for the following reactions.
- 51. What will be the unit of Kc when reactants and products have equal number of moles. Can you elaborate it with example.
- 52. What will be the value of Kc for the following reaction.

$$N_2 + 2O_2$$
 2NO₂
 $N_2 = 1.2 \text{ mol/dm}_3$
 $O_2 = 1.0 \text{ mol/dm}_3$
 $NO_2 = 2.0 \text{ mol/dm}_3$

53. In an equilibrium mixture the concentration of CO is 0.0067 mol/dm³, H₂O is 0.008 mol/dm³, CO₂ is 0.183 mol/dm³ and H₂ is

 0.400 mol/dm^3 . Calculate the value of Kc for this reaction.



54. What will be the Kc unit for following reactions.



Importance Application of Equilibrium constant

- 56. Why the reaction mixture does not have 50% reactants and 50% products at equilibrium position?
- 57. If a reaction has large value of Kc, will it go to completion andwhy?
- 58. How direction of reaction can be predicted?
- 59. How can you know that a reaction has achieved an equilibriumstate?
- 60. If reaction quotient Qc of a reaction is more than Kc. What will be the direction of the reaction?
- 61. Define the law of Mass Action?
- 62. Name two scientist how put forward law of mass action and when?
- 63. Derive Kc expression for a general reaction?
- 64. What are the units of molar concentration?
- 65. How the active mass is represented?
- 66. Write the importance of equilibrium constant?
- 67. Discuss the importance of equilibrium constant for a chemicalreaction?
- 68. How can we prepare nitric acid by Birkland-Eyde process?
- 69. How can we determine the extent of reaction of a chemical withthe help of kc value?
- 70. How can we predict the direction of a chemical reaction?
- 71. Large Kc value shows the fast or slow reaction?
- 72. Elaborate the reactions having the Kc value of 1.
- 73. If the ratio of reactants/ products is greater than Kc value. What will this indicate.

- 74. For what value of Kc the system will be at equilibrium?
- 75. The value of Kc for given reaction is less than 1. Among reactants and products which will be present in large amount in a reaction mixture.
- 76. The value of Kc for the given is very large. Among Chlorinemolecule and chlorine



atoms which will be present in greateramount?



77.

- 78. How Qc helps us to determine direction of a chemical reaction?
- 79. What is extent of chemical reactions and how to measure it
- 80. Define and explain lechatlier principal

Law of Mass Action

- 81. What is relationship between active mass and rate of reaction?
- 82. Derive equilibrium constant expression for the synthesis of ammonia from nitrogen and hydrogen?
- 83. Due to equilibrium the concentration of reactants and productremain constant explain?
- 84. State law of mas action and derive expression for equilibriumconstant (Kc)?
- 85. Write Kc for the following reaction CO+3H2S⇔CH4 +H2O
- 86. Define active mass?
- 87. Relate the active mass with rate of reaction.
- 88. How active mass of any reactants is related to rate of equation?
- 89. Define the equilibrium constant.
- 90. Derive the equation related to equilibrium constant.
- 91. Explain law of mass action.
- 92. Elaborate the old definition of active masses.
- 93. How temperature affects the value of Kc?

- 94. Discus the different definitions of Kc.
- 95. Write the equilibrium expression of the following equation.



Science Society

96. What are the uses of atmosphere gases in the manufacture ofchemicals?

97. How can we prepare nitric acid by Birkland-Eyde process? 98.Shortly discuss

preparation of ammonia (NH3) by Haber process?99.

Recognize Equilibrium

- 100. What are the different physical methods to recognize thechemical equilibrium?
- 101. Differentiate between refractometry and polarimetry?
- 102. List some physical ways to recognize an equilibriumposition.
- 103. Suggest two chemical methods to recognize equilibrium.
- 104. Nitrogen and oxygen reacts to form nitrogen dioxide. The reaction is reversible reaction. How can we know the equilibriumis attained in the reaction by any chemical reaction?
- 105. Write any 2 methods to recognize equilibrium
- 106. Write equation in which kc has no value

Graphical representation of Equilibrium

107. Discuss the equilibrium state with the help of graph and anexample?

Finding values of equilibrium constant

- 108. In equilibrium mixture the concentration of hydrogen(H) andiodide(I) 0.04 mol/dm3 each while that of HI is 0.08 mol/dm3. Find kc of the following reaction. H2 + I2 ≒ 2HI
- 109. How to find values of equilibrium constant?

Chapter No. 10

Acids, Bases and Salts

Introduction

Concept of Acid and Base

- 110. What is meant by Acid?
- 111. What is meant by Base?
- 112. Name the acids present in. a) vinegar b) ant sting c) citrusfruit d) sour milk?
- 113. Write down characteristics properties of Acids and Bases.
- 114. Define a base and explain all alkalis are bases, but all bases not alkalis.
- 115. List some uses of acid and bases in household items.
- 116. Differentiate between acids and bases in general.
- 117. Discus the effect on acid and base on litmus paper.
- 118. An unknown solution was tested with the help of litmus paper and it turned red litmus blue. Identify the solution as acidicor basic.
- 119. If someone from your family is suffering from acidity ofstomach. What would you suggest as a remedy? (lemon juice, vinegar, baking soda)
- 120. Name the acid present in ant string and give its chemical formula. Also give common remedy to relief from its string.

Arrhenius concept of acid and Base

- 121. Define Arrhenius acid. Give example?
- 122. Define Arrhenius base. Give example?

- 123. Write down limitations of Arrhenius concept?
- 124. Elaborate the Arrhenius concept of acid and bases.
- 125. Why the acidity of CO₂ and basicity of NH₃ couldn't beexplained by Arrhenius.
- 126. Identify the Arrhenius acids and bases

HCl, CO², Ca(OH)₂, NaOH, H₂SO₄, NH₃, BF₃, AlCl₃, Br₂, H₂O

Bronsted-lowery concept of acids and Bases

- 127. Define Bronsted and lowery acid?
- 128. Define Bronsted- Lowry base.
- 129. Define Bronsted-Lowery base and explain with an examplethat water is Bronsted-lowery base.
- 130. How can you justify that Bronsted-Lowery concept of acidand base is applicable to non-aqueous solution? Reaction according to Arrhenius acid base concept?
- 131. How can you justify that NH3 is Bronsted-Lowery but notArrhenius base?
- 132. What is the difference between Arrhenius base and Bronsted-lowery base?
- 133. Write down limitation of Bronsted Lowry concept?
- 134. Define amphoteric Substance.
- 135. Define Adduct.
- 136. Prove that water is an amphoteric specie?
- 137. Define conjugate acid and base.
- 138. Write conjugate acid-base pairs of common species in a tableform?
- 139. How hydrogen ion act as a proton?
- 140. What is the conjugate base of H_2SO_4 according to Bronstedlowery concept?
- 141. Elaborate the Bronsted Lowry concept with example ofwater.
- 142. NaOH is not Bronsted base, while OH⁻ is a Bronsted base.Justify the statement.

- 143. Water act as both acid and base. Elaborate its nature withsuitable examples.
- 144. Differentiate between Arrhenius and Bronsted concept ofacids and bases.
- 145. Define conjugate acid base pairs. List two examples
- 146. Identify the conjugate acids and bases from given reactions.



Lewis Concept of acids and Base

- 147. Define Lewis acids. Give two examples.
- 148. Define Lewis base. Give two examples.
- 149. Why BF3 behaves as a Lewis acid?
- 150. Define and give characteristics of a Lewis acid?
- 151. Which kind a bond forms between Lewis acid and base?
- 152. Why H+ ion acts as a Lewis acid?
- 153. Discuss Lewis concept of acids and bases with suitableexamples.
- 154. Why Lewis concept is broadest of all concepts of acids andbases.
- 155. Lewis concept can define the acidity of CO₂ and basicity ofNH₃. Justify the statement.
- 156. List some uses of analytical chemistry.
- 157. Elaborate that NH₃ is Lewis base.
- 158. BF_3 is a Lewis acid. Justify the statement.AlCl₃ is

Lewis acid. Justify the statement.

- 159. How electrophiles are Lewis acids?
- 160. How co-ordinate covalent bond is formed in Lewis acid basereaction?
- 161. Why Lewis concept is most broad of all the concepts?

162. Classify the following substance as Lewis acids and basesA AlBr₃ b
 CH₃-CH₂-OH c CN⁻¹

Lewis base is always act as a Nucleophile. Elaborate with suitableexample.

Neutralization

- 163. State and explain the neutralization reaction according toLewis concept.
- 164. Define neutralization reaction. Give example?
- 165. Discuss neutralization reaction.
- 166. What are antacids?
- 167. What will be the salt of given reaction?

$Zn(OH)_2 + HNO_3 \longrightarrow ?$ $HCl + Mg(OH)_2 \longrightarrow ?$

Salts

- 168. Define salts?
- 169. Define normal or neutral salts.
- 170. Define acidic salts.
- 171. Define basic salt.
- 172. Name the types of salts.
- 173. Define double salt. Give example.
- 174. Define mixed salt. Give example.
- 175. Define complex salt. Give example?
- 176. Name the salts which are formed when Zn metal reacts withfollowing acids. A)Nitric acid b) phosphoric acid C) acetic acid.
- 177. How the basic salts turn into normal salts? Explain with anexample
- 178. Na2SO4 is a neutral salt while NaHSO4 is an acidic saltjustify.
- 179. Which type of salts produce SO2 gas ON REACTING WITHACIDS?

180.	Give few characteristics of salts.
181.	Which salt is used to prepare plaster of Paris?
182.	Why a salt is neutral, explain with an example?
183.	How can you justify that Pb (OH)NO3 is a basic salt?
184.	How basic salts are formed by poly acid bases?
185.	How acidic salts are further neutralized by the base?
186.	Ferric alum is a double salt. Explain its formation?
187.	How salt component in double salt retain its properties?
188.	Define salts.
189.	Identify the positive and negative ion in salt MgCl ₂ .
190.	Discuss direct displacement reaction.
191.	List 3 methods of preparation of salts.
192.	Differentiate between acidic, basic and neutral salts.
193.	How basic salts can be obtained?
194.	Define insoluble salts. List one reaction to elaborate it.
195.	Complete the following reactions.
196.	Identify the acid and base for the formation of common saltyou use in your
food.	
197.	From which acid and base CuCO3 (salt) can be obtained?
198.	Discuss the formation of salt by the use of metallic oxideand an acid.
199.	Discuss the double salts.
	USES OF SALTS
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- 200. How sodium chloride helps in de-icing of roads?
- 201. What is soda ash/ washing soda?
- 202. Discuss the method titration.
- 203. List some uses of salts.

Preparation of Salts

- 204. How the soluble salts are recovered from water?
- 205. How the insoluble salts are prepared?

Strength of acids and Bases

- 206. HCL and H2SO4 are strong acids while their solutions are equimolar, they have different pH values. Why they have differentpH values?
- 207. Why pure water is not a strong electrolyte?

pH & poH scale

- 208. Define PH. Write down its formula.
- 209. Define pH. What is the pH of pure water?
- 210. Write down uses of PH.
- 211. Name three common household substances having a) pH values greater than 7 b)pH values less than 7 c) pH values equal to7.

TEST 2

Chapter No:11

Organic Chemistr

- 212. Discuss the branch organic chemistry.
- 213. Who put forward vital force theory?
- 214. Discuss vital force theory.
- 215. Why vital force theory was rejected?
- 216. What are the two types of organic compounds?
- 217. Draw the structure of marsh gas, what will be its 3D-structure?
- 218. List four methods to represents any organic compound.
- 219. What will be the molecular formula of butane and propane?
- 220. Draw the structural formula of pentane and octane.
- 221. Discuss the method by which structural formula can be shown.
- 222. Write the condensed formula for heptane.
- 223. Draw the dot and cross structure of pentane.
- 224. Name the following compound.



Synthesis of organic compound in the laboratory

- 225. What is vital force theory who proposed it?
- 226. Who rejected the vital force theory and how?
- 227. Name some compounds of carbon which are inorganic?

Organic compounds

- 228. Define organic chemistry.
- 229. Why organic compounds are numerous?

Formula of organic compound

- 230. What are different types of formula by which we canrepresent organic compounds?
- 231. Define molecular formula with example.
- 232. Define structural formula with example.
- 233. Define condensed formula with example.
- 234. What is dot and cross formula.

Classification of organic compounds

- 235. Write down the names of classes in which organiccompounds are classified.
- 236. Define open chain compound. Explain their types.
- 237. What are aliphatic compounds?
- 238. Define cyclic compound. Explain their types.
- 239. Define aromatic compound. Give example.
- 240. Define homocyclic compounds. Explain their types.
- 241. What is the meaning of term aromatic?
- 242. What are benzenoid compounds?

- 243. Define alicyclic or non-benzenoid compounds?
- 244. How the prefix 'n' is used for the nomenclature of straightchain organic compounds
- 245. How isobutene is different from neo- pentane
- 246. Classify the organic compounds on the basis of straight andbranched chain system.
- 247. Classify the organic compounds on the basis of number ofbonds present in it.
- 248. Classify the organic compounds on the basis of cyclicsystem.
- 249. What are aromatic compounds?
- 250. Differentiate between homo and hetero-cyclic compounds.
- 251. Draw the flow sheet diagram for classification of organiccompounds.
- 252. Name the following compounds.



Diversity and magnitude of organic compound

- 253. Define catenation.
- 254. What are two basic conditions for elements to exhibit catenation?
- 255. Define isomerism. Give example.
- 256. Organic compounds are diverse in nature. Justify thestatement.
- 257. Discuss the mode of C-bonding in organic compounds.
- 258. Define catenation. Give one example.
- 259. Define isomers and list two examples.
- 260. Does alcohol and ether are isomers of each other.
- 261. Why carbon atoms form large number of compounds?

262. How catenation contributes to the diversity and magnitude of organic compound?

263. Why organic compounds have low melting andboiling point? On which basis different organic compound show similarbehavior?

General characteristic of organic compounds.

- 264. Why melting and boiling points of organic compounds arevery low?
- 265. Why organic compounds are poor conductor of electricity?
- 266. Point out the properties of carbon which are responsible forformation of long chains of carbon atom compounds?
- 267. Justify that organic compounds are used as food.
- 268. List some characteristics of organic compounds
- 269. Methanol an organic compound is soluble in water (inorganiccompound). Explain why this happens.
- 270. Discuss the volatile nature of organic compounds.
- 271. What is cracking of petroleum? How it is commerciallyhelpful?
- 272. Define is combustion process?
- 273. NaCl reacts faster while CH4 burns slowly. Justify.
- 274. Why inorganic reactions are faster than organic reactions?
- 275. Explain why organic compounds show non-ionic character?

Sources of organic compound

- 276. How we get organic compounds from Earth's crust?
- 277. What are the reasons for formation of millions of organiccompounds?
- What is coal?
- 279. Define carbonization.
- 280. Write down the names of different types of coal.
- 281. Define destructive distillation?
- 282. Write down the names of product obtained by destructive distillation of coal.

- 283. What is pitch? What is its used?
- 284. Is coal tar a compound? What is importance of coal tar?
- 285. Name the gases which are found in coal gas?
- 286. How fossils fuel is obtained?
- 287. Define coal.
- 288. Discuss different stages of formation coal?
- 289. Discuss destructive distillation.
- 290. What are the natural sources of organic compounds?
- 291. What is compressed natural gas?
- 292. Can we prepare the organic compounds in laboratory?
- 293. What was the first organic chemical prepared in the aboratory also write its reaction.
- 294. List some uses of organic compounds as a food.
- 295. What are some organic medicines that we can use?
- 296. Define life molecules. List two examples

Alkanes and Alkyl radicals

- 297. What are alkanes? Give their general formula?
- 298. Define alkyl radical. How they formed?
- 299. Define alkanes.
- 300. What will bwe gernaral formula for alkanes?
- 301. Write the molecular formula for nonane.
- 302. what is meant by Paraffins?
- 303. Define homoligus series.
- 304. What will be the homologus series for alkane?
- 305. Does compounds in homologus seried have the same genralformula?
- 306. Why propane and hexane have the same chemical properties?
- 307. Define alkyl radicals.
- 308. Alkyl radicals can be formed by removing carbon orhydrogen?
- 309. What will be the alkyl radical for pentane?
- 310. How can we name alkyl radical formed from methane?
- 311. Name the following alkyl group

CH3CH2CH2CH2CH2----

CH3CH2CH2-----

312.	Why alkanes are saturated in nature?
313.	How cycloalkanes have two hydrogen atomsless than
straight chain alkanes?	
314.	How name of alkyl radical is derived from theparent alkane?
315.	How molecular weight of organic compoundincreases down
the homologous series?	

Functional Group

316.	What is functional group? Give example.
317.	What is functional group for aldehyde and ketone?
318.	What is functional group for ether and carboxyliccompounds?

- 319. What is ester linkage?
- 320. What are amines give examples?
- 321. What is functional group for an alkyl halide?
- 322. Give functional group for alkene and alkyne.
- 323. What are identification test for alcoholic group?
- 324. Give identification test for aldehyde group?
- 325. Write down the name of identification test for primaryamines?
- 326. What is difference between aldehyde and ketones?
- 327. Define functional group.
- 328. What will be the reactive part in an organic compound?
- 329. To understand the properties of an organic compound, onemust identify the functional group or not?
- 330. In organic compound, which part is responsible for itsphysical properties?
- 331. List seven homologous series of organic compounds.
- 332. What will be the next compound after CH₃COOH, andC₃H₇NH₂?

333. Identify the functional group in following compounds.



334.

How functional groups contribute to thereactivity of

organic compounds?

335.How can we recognize different organic
compound on

the basis of their functional groups?

336. Differentiate between aldehyde and ketone.

Chapter No. 12 Hydrocarbon

4.1 Alkanes

- 1. Why are the alkanes called paraffins?
- 2. A compound consisting of four carbon atoms has a triple bond in it. How many hydrogen atoms are present it.
- 3. Give the structural formula of isobutane and isopentane.
- 4. Why are hydrocarbons considered as parent organic compounds?
- 5. . why alkanes are inert in nature?
- 6. what is the functional group of alkanes?
- 7. what is subsitution reaction?
- 8. what is the geometry of CH4?
- 9. Why london dispersion forces in straight chain alkanes are greater?
- 10. what do you know about atomic hydrogen?
- 11. write 2 common examples of hydrocarbons?
- 12. Define reduction reaction? Give example.
- 13. List daily uses of hydrocarbons.
- 14. Why alkanes are called paraffin's?
- 15. Differentiate between alkanes and cycloalkanes.
- 16. What will be homologous compound after hexane? Write its condensed formula.
- 17. Draw the cross and dot structure for propane.

- 18. Draw the structure of the following
 - a. 2-methyl hexane 2,3,5-trimethyl hexane
- 19. List IUPAC steps for naming of alkanes.
- 20. Discuss addition reaction.
- 21. Do alkanes undergo addition or substitution reaction.
- 22. How can ethane be prepared from ethene?
- 23. How can you differentiate hexane from hexene?
- 24. Discuss the hydrogenation of alkenes.
- 25. How alkane can be prepared from alkynes?
- 26. Discuss the preparatory method of alkanes through reduction of alkyl halides.
- 27. Between hexane and octane, which compound will be having high molecular weight?
- 28. Why the density of alkanes increases with increase in their chain size?
- 29. What will be the starting alkyl halide for the preparation of propane?
- 30. Name the starting alkyne used for the preparation of butane.
- 31. Discuss the halogenation of alkanes.
- 32. List the steps involved in preparation of carbon tetrachloride from methane.
- 33. Why alkanes undergo substitution reaction?
- 34. Write the general reaction for combustion.

4.2 Physical properties of alkanes

- 35. Why the alkanes are used as fuel.
- 36. Give the physical properties of alkanes.
- 37. What is the different between a straight and branched chain hydrocarbon.
- 38. Write the sources of alkanes?
- 39. Why butane is used in portable and gas lighters.
- 40. Why do hydrocarbons not dissolve in water?

4.3 Important reaction of alkanes

- 41. Justify that alkanes give substitution reaction?
- 42. What do you mean by halogenation? Give the reaction of methane with chlorine in bright sunlight.
- 43. Why the burning of alkanes requires sufficient supply of oxygen?

4.2.1 Alkenes

- 44. Why are alkenes called olefins?
- 45. Define elimination reaction.
- 46. What are olefins?
- 47. write the reaction for the formation of vegetable ghee?

- 48. what is Baeyer, s test?
- 49. What are glycols?
- 50. What will be formed when ethene gas is bubbled through conc. solution of HCl.
- 51. Alkenes are reactive in nature. Justify.
- 52. Draw the dot and cross structure for propene.
- 53. What is meant by Olefins?
- 54. List steps involved in naming of alkenes.
- 55. Discuss elimination reaction. How it is opposite from addition reaction.
- 56. Prepare alkene from dehydration of alcohols.
- 57. Write the preparation of alkene from alkyl halides.
- 58. Hexene is soluble in organic solvent or inorganic solvent?
- 59. What will be the starting alcohol for the preparation of propene?
- 60. Name the starting alkyl halide for the preparation butane.
- 61. What do you mean by dehydration? Give one example.
- 62. Why the reddish brown color of bromine disappears upon addition of alkene?
- 63. List some addition reaction of alkenes.
- 64. The order of reactivity of acids is HI>HBr>HCl. Justify the statement.
- 65. Write the oxidation of ethene with KMnO4.
- 66. You are given two flammable liquid hydrocarbons. How would you identify alkane and alkene among two of them?
- 67. What are glycols.
- 68. Write the reaction for conversion of oil into ghee.
- 69. Write the starting alkene for the preparation of 1,2-dibromoethane.
- 70. Discuss Baeyer's test.
- 71. A solution turns colorless upon addition of KMnO4, what does this indicates?
- 72. Which hydrocarbons contributes towards the ripening of fruits?
- 73. What will be the starting alkene for the preparation of ethylene glycol?
- 74. Complete the following reactions.
- 75. What is used in oxyacetylene torches and how?
- 76. Write the reaction for the formation of oxalic acid.
- 77. Draw the stucture for 2,3-dimethyle-2-butene.
- 78. which is most reactive between alkane, alkene ans alkyne and why?

4.2.2 Preparation of alkenes

- 79. What do you know about hydrogenation of alkene?
- 80. How can you prepare propene from propyl alcohol?

4.2.3 Physical properties of alkenes

- 81. Why alkene is reactive?
- 82. Give few physical properties of alkene.
- 83. Give the functional group of alkene and alkynes.

4.2.4 Chemical properties of alkenes

- 84. How can you prepare ethene from alcohol.
- 85. Why alkane can't be oxidized with KMnO4 solution?
- 86. A Identify propene from propane with a chemical test.
- 87. Both alkenes and alkynes are unsaturated hydrocarbons. State the one most significant difference between them.
- 88. Give a test to identify unsaturation of an organic compound.
- 89. How can you identify ethane from ethene?
- 90. Why Color of Bromine water discharges on addition of ether in it?
- 91. Give a test to identify unsaturation of an organic compound.
- 92. What is addition reaction?
- 93. What is difference between Glycol and Glyoxal.
- 94. How is alcohol tested?
- 95. What is phenyl hydrazine test.

4.3. Alkynes

- 96. what are oxyacetylene torches.
- 97. Draw the dot and cross structure for butyne.
- List IUPAC rules for naming of alkynes. Discuss preparation of alkynes from dehydration of adjacent dihalides.
- 99. Discuss the preparation of alkynes form tetra halides.
- 100. Name the starting alkyl halide used for the preparation of propyne.
- 101. Name the starting tetra halide used for the preparation of butyne.
- 102. List some important reactions of alkynes.
- 103. Name the compound produced from oxidation of ethyne.
- 104. Complete the following reactions.

4.3.1 Physical properties of alkenes

105. Give some uses of alkynes?

4.3.2 Chemical properties of alkynes

106. How is tetrabromoethane prepared from acetylene.

TEST 3

Chapter No 13. Biochemistry

5.1 Carbohydrates

- 107. Describe the uses of carbohydrate?
- 108. Write the product of lactose hydrolysis?
- 109. write two diseases which can be cured by the use of carbohydrates?
- 110. Discuss biological molecule.
- 111. List some examples of carbohydrates
- 112. Carbohydrates contains which kind of functional groups.
- 113. Is glucose a Pentose?
- 114. What are hexoses?
- 115. Discuss dextrose sugar?
- 116. What is the ratio of carbon hydrogen and oxygen in carbohydrates?
- 117. Name the carbohydrates having nitrogen in it?
- 118. Name the carbohydrates having sulfur in it?
- 119. What is the general formula for carbohydrates?
- 120. What are macromolecules?
- 121. Why athletes use honey?
- 122. List some uses of carbohydrates.

5.2Classification of carbohydrates

- 123. Discuss the basis on which carbohydrates are classified.
- 124. Classify the sucrose, lactose and maltose as mono, di or tri saccharides. Give reason.
- 125. Draw the flow chart for classification of carbohydrates.
- 126. Distinguish between mono, Di, and tri saccharides?

127. Monosaccharides

- 128. What is the difference between glucose and fructose.
- 129. Give the characteristics of Monosaccharides?
- 130. In which form glucose is stored in the body.
- 131. Can we further hydrolyzed glucose. If not give the reason.
- 132. On which basis carbohydrates are soluble in water?
- 133. Due to presence of which functional group carbohydrates are water soluble?

- 134. Can we further hydrolyze maltose?
- 135. Discuss glyosidic linkage?
- 136. Glyosidic linkage is formed by removal of which molecule?
- 137. Discuss the use of dextrose in drips.

138.

- 139. what is the main difference between glucose and fructose?
- 140. Q4. Draw the cyclic stucture of Glucose?
- 141.
- 142.

Oligosaccharides

- 143. Give an example of Disaccharides. How is it hydrolyzed into Monosaccharides?
- 144. Lactose is Disaccharides, which Monosaccharides are present in it.
- 145. What is sucrose? How is it hydrolyzed?
- 146. Name the source of lactose.
- 147. What will be the source sucrose?
- 148.

Polysaccharides

- 149. Give the characteristics of polysaccharides.
- 150. Sources and uses of carbohydrates
- 151. List different sources of cellulose.
- 152. List different sources of starch
- 153. Is starch an oligosaccharide or polysaccharide?
- 154. Why polysaccharides are called non sugars?
- 155. write any two examples of polysaccharides?

Protein

- 156. Why the ten amino acids are essential for us?
- 157. How protein is found
- 158. Which elements are found in proteins?
- 159. The general formula of amino acid is.

- 160. What do you mean by non-essential amino acid?
- 161. Q1. Draw the stucture of peptide linkage?
- 162. Q2. which type of protein is present in your hair?
- 163. Q3. How many amino acids combine to form single type of protein?
- 164. Q4. Name the protien which act as the oxygen carrier in blood?
- 165. Q5. Difference between essential and non essential amino acids
- 166. Write the formula of amino acid. And identify the functional groups present in it.
- 167. What is peptide bond.
- 168. Peptide band is formed by removal of which molecule?
- 169. What is the name of bond that forms between two amino acids in building a protein?
- 170. Draw the structure of protein having -CH3 as R group.
- 171. Draw the structure of protein containing two amino acids.
- 172. What is meant by proteins?
- 173. Discuss the building block of protein.
- 174. Differentiate between essential amino acids and non-essential amino acids.
- 175. Name the resultant molecule formed by the combination of two amino acids.
- 176. Formation of peptide bonds are based on which process? Hint(condensation)
- 177. Discuss the 3 types of bonding in proteins.
- 178. What causes the formation of secondary tertiary, and quaternary structures.
- 179. Discuss different kinds of proteins.
- 180. Name the animal sources of proteins.
- 181. Discuss the plant sources of proteins.
- 182. How protein can be use as oxygen carrier.
- 183. Discuss the structural importance of proteins.
- 184. Discuss the role of proteins as biological catalyst.
- 185. Discuss the role of enzymes of regulators of body.
- 186. What are antibodies.
- 187. List some uses of proteins.
- 188. What is amylase and where it is used?
- 189. Discuss the use of xylanases.

Lipids

Fatty acids

- 190. Name two fatty acids with their formula?
- 191. What is difference between ghee and oil?

- 192. Give the characteristics of fats?
- 193. Give the sources and uses of animal fats?
- 194. Plants are sources of oil, justify it?
- 195. Q1. what are triglycerides?
- 196. Q2. what are glycerols?
- 197. Q3. what is the main difference between fats and oils?
- 198. Q4. Why fats and oils float on the surface of water?
- 199. What is meant by lipose?
- 200. Are lipids soluble in water?
- 201. Are lipids being soluble in chloroform?
- 202. Which components are included in lipids?
- 203. Differentiate between fats and oils.
- 204. List several types of lipids.
- 205. Name the lipids which produces fatty acids, alcohol along with some other substance.
- 206. Differentiate between simple and complex lipids.
- 207. Is phospholipid a simple lipid?
- 208. What are triglycerides?
- 209. Name the two components which forms the long chains of lipids.
- 210. Write the general formula of triglycerides.
- 211. Name the building blocks of lipids.
- 212. Write the balance chemical equation for the formation of lipid molecule.
- 213. What are polyunsaturated fatty acids.
- 214. Write the chemical formula of steraic acid. Identify it as saturated or unsaturated lipid.
- 215. Write the chemical formula of caproic acid and identify the two functional groups in it.
- 216. Differentiate between fats and oils.
- 217. Write the sources of saturated fatty acids.
- 218. Write the sources of unsaturated fatty acids.
- 219. Why mustard oil is liquid, while bees wax is solid at room temperature.
- 220. Discuss the process by which oil can be converted into fat?
- 221. In factories vegetable oil is converted into ghee. Discuss the process behind the conversion.
- 222. Which compounds are including in lipids?
- 223. Explain the hydrogenation of vegetable oil.
- 224. List animal sources of lipids.
- 225. List plant sources of lipids.
- 226. What is the main function of lipids?
- 227. Discuss the insulating material present underneath the skin of mammals such as polar bears.
- 228. List some uses of lipids.

Nucleic acids

- 229. What is the function of DNA.
- 230. What is sucrose? How is it hydrolyzed?
- 231. What is nucleic acid.
- 232. Describe the structure and function of DNA and RNA
- 233. what is the stuctural unit of DNA and RNA?
- 234. write types of nitrogenious bases?
- 235. write the function of DNA and RNA.
- 236. write the bases of DNA AND RNA.
- 237. what type of bond is present in DNA strand also define it.
- 238. Discuss the biological importance of nucleic Acids.
- 239. Write the function of DNA.
- 240. What five elements are primarily responsible for the makeup of DNA and RNA.
- 241. How do DNA and RNA differ in structure.
- 242. Discuss the double helical structure present in DNA.
- 243. Which type of bond acts as adhesive between the polynucleotide chains?
- 244. Who directs the synthesis of proteins in DNA.
- 245. How DNA acts as heredity material.
- 246. What are genetic codes?
- 247. What is mutation. List some factors that can cause mutation in DNA.
- 248. List some functions of DNA and RNA.
- 249. Differentiate between RNA and DNA on the basis of sugar unit.

Vitamins

- 250. Justify water soluble vitamins are not injurious to health?
- 251. Give the types of vitamins.
- 252. Importance of vitamins
- 253. What is the significance of vitamins?
- 254. Describe the sources and uses of vitamins A?
- 255. Describe the sources and uses of vitamins A?
- 256. What are advantages of water-soluble vitamins?
- 257. What is the disadvantage of fat-soluble vitamins?

- 258. What is meant by Vitamine.
- 259. Can a body synthesize vitamins?
- 260. Separate water soluble vitamins from the following l. Vitamin A, vitamin C, vitamin E, Vitamin B.
- 261. Discuss the importance of vitamins.
- 262. Is vitamin C soluble in fat or oil.
- 263. Discuss the sources of vitamin A.
- 264. What will be the deficiency symptoms for vitamin A?
- 265. Discuss the disease scurvy.
- 266. Discuss the disease caused by the deficiency of vitamin D.
- 267. What is hemorrhage.
- 268. List some disease caused by deficiency of various types of vitamins.

Chapter no. 14 Environmental Chemistry-1- Atmosphere

Atmosphere

- 269. What is meant by atmosphere?
- 270. What is difference between atmosphere and environment.

Layers of atmosphere

TROPOSPHERE

- 271. Discuss the history of earth back at 4.5 billion years ago.
- 272. How the atmosphere of earth was made suitable for sustenance of life?
- 273. List four natural systems of earth.
- 274. Define atmosphere.
- 275. Among nitrogen and Ar which will be present in trace amount in atmosphere.
- 276. Name the factor which forces the gases to remain closer to earth surface.
- 277. At high altitude, what will be the density of atmosphere?
- 278. On which factors, atmosphere is divided into 4 layers.
- 279. Which layer affects the seasons and pressure in atmosphere?
- 280. In which layer weather processes occurs?
- 281. How wind movement occurs in troposphere?
- 282. Discuss time lapse.
- 283. Among four layer which layer is warmer?
- 284. Why people experiences difficulty in breathing at higher altitude?

Stratosphere

- 285. What is meant by strato?
- 286. To which height, stratosphere is extended above troposphere?
- 287. STRATOSPHERE is also called ozonosphere. Justify the statement.
- 288. Discuss the process of ozone formation in stratosphere.
- 289. List some factors which enhances the breakdown of ozone.
- 290. Weather balloons and jet crafts tends to fly in stratosphere. justify the statement.
- 291. Differentiate between troposphere and stratosphere.
- 292. List some importance of atmosphere.
- 293. How atmosphere helps in retaining the atmosphere around + 15°C.
- 294. Discuss how temperature variation is reduced by atmosphere.
- 295. How atmosphere prevents life on earth from external dangers.
- 296. How energy is maintained in earth and atmosphere.
- 297. List components of troposphere and stratosphere.
- 298. How is the temperature of atmosphere maintained?
- 299. Where the ozone layer exists?
- 300. Why the temperature of upper atmosphere is higher?

Air pollution

- 301. What is meant by air pollution? Writes its effect.
- 302. What do you mean by air pollutants?
- 303. Discuss air pollution.
- 304. Different between primary and secondary air pollutant.
- 305. Among CO2 and H2CO3, which will be secondary pollutant?
- 306. Discuss the ground level ozone. Identify it as primary or secondary pollutant.
- 307. List four human activities which contribute to air pollution.
- 308. Incineration is helpful in reducing solid waste mass but it has also adverse effect on environment. Discuss its adverse effect on atmosphere.
- 309. List some solid pollutants and gaseous pollutants.
- 310. List some natural sources of oxides of carbon.
- 311. List some natural sources of VOCs.
- 312. How methane is produced by animals.
- 313. Suggest a reason for the presence of CO in the car's exhaust fumes.
- 314. Discuss the contribution of termites towards the formation of methane gas.
- 315. List some synthetic sources of oxides of nitrogen.
- 316. Name the main synthetic process that enhances the concentration of CO in atmosphere.
- 317. How CFCs are released in atmosphere.

318. Why is global warming on often referred to as the greenhouse effect?

Types of air pollutants

- 319. What is the difference between primary and secondary pollutants.
- 320. Name three primary air pollutants.

Sources of air pollutants

- 321. What is the difference between pollutants and contaminants?
- 322. Why converters should be used in automobile exhaust?
- 323. Write importance of CO2 to life on earth.
- 324. How SO2 and SO3 are formed. How these gases cause air pollution?
- 325. How nitric oxide is produced in air.
- 326. How nitric oxide is produced by the combustion of fossils fuels?
- 327. How NO and NO2 are formed? How these gases cause air pollution
- 328. What are the effects of SO2 gas? Also writes its properties.

Effects of air pollutants

- 329. How the oxygen carrying capacity of blood is reduced?
- 330. Among CO and O2, which has more binding ability with hemoglobin.
- 331. How global warming is increased with an increased ratio of CO2?
- 332. List some adverse biological effects of SO2.
- 333. Discuss photochemical smog and how it is formed.
- 334. What is lead pollution.
- 335. Name the process which increases the salt production in water.
- 336. Discuss the adverse effect of eutrophication.
- 337. If the production of any salt increases in water, what will be the name of process?
- 338. Increased level of greenhouse gases will be beneficial or not?
- 339. If glaciers start melting with an increase in temperature. What will be the effect of it on world?

Acids rain

- 340. Sketch the labeled diagram showing the formation of acid rain and its effect.
- 341. Effects of acids rain
- 342. How acid rain is produced?
- 343. Why acid rain damage building?
- 344. How aquatic life is affected by acid rain.
- 345. Define acid rain.
- 346. What causes the pH of rain drop below 5.6.
- 347. List the gases involved in the formation of acid rain.

- 348. Discuss the contribution of CO_2 to the formation of acid rain.
- 349. Discus the contribution of SO_2 to the formation of acid rain.
- 350. Write the reaction involved in the formation nitric acid in rain.
- 351. List some natural sources of acid rain.
- 352. Discuss the effect of acid rain on aquatic life.
- 353. Historical places like tajmahal has been deteriorate. List some factors contributing in its deterioration.
- 354. Write the chemical reaction of acid rain on building materials.
- 355. What is the adverse effect of acid rain on humans and soil?
- 356. What steps a government must encourage to control air pollution.
- 357. What are the duties of common man to reduce the pollution on earth?
- 358. As a global citizen, how can you play a part to reduced air pollution at personal level? Argue.

Ozone depletion

- 359. What is meant by ozone? How is it formed in atmosphere?
- 360. What is meant by ozone? Where ozone layer exists in atmosphere.
- 361. How ozone layer protects our earth?
- 362. How the concentration of ozone in stratosphere remains nearly constant?
- 363. Justify, ozone is beneficial for human beings.
- 364. Why is ozone depleting in atmosphere?
- 365. What do you mean by ozone hole.
- 366. Where the ozone layer is formed.
- 367. List physical properties of ozone.
- 368. What is ozone layer.
- 369. What is ozone layer depletion?
- 370. Write the steps involved in the formation of ozone layer.
- 371. List some contributors the enhances the depletion of ozone.
- 372. How refrigerator contribute towards the depletion of ozone.
- 373. Write the reaction of CFCs with ozone.
- 374. Discuss the contribution of CFCs towards the depletion of ozone.
- 375. Write the reaction of NO_x , O_2 , and SO_2 with ozone.
- 376. List the adverse effect of UV rays on human life.
- 377. Discuss the adverse effect on UV rays on aquatic life.

Global warming

- 378. Why the flood risks are increasing.
- 379. Why CO2 is called a greenhouse gas.
- 380. Define greenhouse gases.

- 381. How greenhouse gases are useful in maintaining earth atmosphere?
- 382. What is global warming?
- 383. How global warming is contributing in changing earth environment?
- 384. Define desertification.
- 385. What will happen if glaciers start melting at faster rates?
- 386. List the effects of global warming.
- 387. At a global citizen, how can we play an important part in reducing global warming?

Teaching Round 4

CHAPER NO 15.

ENVIORONMENTAL CHEMISTRY: WATER

INTRODUCTION

- 388. Discuss the occurrence of water on earth.
- 389. Write occurance of water.
- 390. Why sea water is unfit for drinking purpose?

391.

- 392. Discus different forms of water.
- 393. How much percentage of water is drinkable and why?
- 394. What are inland waters?
- 395. Discuss some important functions of water.
- 396. Give Quranic importance of water.
- 397. Water has anomalous behavior. Justify.
- 398. Water expands when temperature is down below 4°C. how?
- 399. In cold regions a layer of ice forms on surface of water. What is the importance of this layer?
- 400. Define water quality.
- 401. As a global citizen, how can one contributes in maintaining water quality?

COMPOSITION OF WATER AND ITS PHYSICAL PROPERTIES

- 402. Water is a compound not an element. Justify.
- 403. Discus the composition of water by volume.
- 404. Discuss the composition of water by mass.
- 405. Define specific heat of a substance.
- 406. Water has a high specific heat. How it is helpful in everyday life?
- 407. Calculate the percentage of hydrogen and oxygen in water.
- 408. List some important physical properties.
- 409. Give composition of water molecule.

410.

- 411. What is the pH of pure water?
- 412. How water electrical conductivity increases by dissolving electrolyte?

CHEMICAL PROPERTIES OF WATER

- 413. Discuss the thermal stability of water.
- 414. List some chemical properties of water.
- 415. Write the reaction of water with metal oxides.
- 416. Discuss the reaction of water with non-metals.
- 417. Define hydrolysis reaction.
- 418. Hydrolysis is the reverse of neutralization reaction. Justify.
- 419. Write some reaction of water with alkali and alkaline earth metals.
- 420. Some we observe soft pungent smell in tap and pool water. Can you name the chemical present in water and why it is used in water?
- 421. What is the chemistry behind using chlorine in water?
- 422. Write the reaction of slacked lime with water.
- 423. Write the reaction of chlorine as cleaning agent of water.

WATER AS SOLVENT

- 424. Water is a universal solvent. Justify.
- 425. NaCl dissolves in water based on which property?
- 426. Elaborate the polarity of water molecules.
- 427. Discuss hydrogen bonding in water
- 428. Point out two properties of water that makes it an excellent solvent?
- 429. Why the water molecule is polar?
- 430. Why non polar gases are soluble in water?
- 431. Write down bases of dielectric constant?
- 432. How hydrogen bonding is helpful in dissolving different compounds in water?
- 433. Why water is considered to be universal solvent?
- 434. Water is excellent solvent give reason?
- 435. Discuss the dielectric constant of water.
- 436. water can dissolve some non-ionic compounds. Justify the statement.

SOFT AND HARD WATER

- 437. Define hard water.
- 438. List the compounds which contributes to the hardness of water.
- 439. Differentiate between temporary and permanent hardness of water.
- 440. Which salts are responsible for hardness of water?
- 441. What is the principle of removing permanent hardness of water?
- 442. How addition of sodium carbonate removes permanent hardness of water?

443.

- 444. What happened if you add lump of cesium to water?
- 445. What is the difference between soft and hard water?
- 446. What are the types of hardness of water?
- 447. How temporary hardness is removed by boiling method?
- 448. How temporary hardness is removed by clark's method?

449.

- 450. List some methods to remove temporary hardness of water.
- 451. Na₂CO₃ is used in removing the permanent hardness of water. Write the reactions involved in the procedure.
- 452. How does hard water differ from soft water?
- 453. Make a list of main methods of softening hard water. In each case write the chemical equation to summarize the chemical resections involved.
- 454. List some disadvantages of hard water.
- 455. Explain how hard water hampers the cleaning action of a soap.
- 456. Why hard water is sometimes undesirable?
- 457. Discuss is ion exchange method.
- 458. What are zeolites?
- 459. What is sodium zeolite?
- 460. How sodium zeolite softens water?
- 461. What is meant by water softening.
- 462. What is capillary action?
- 463.

WATER POLLUTION

- 464. What is water pollution?
- 465. What is meant by water pollution
- 466. List two ways in which lakes and streams become polluted?
- 467. Why ocean water is undrinkable?
- 468. How the increased demand of industrial goods is catastrophic for water?
- 469. Differentiate between waste and pollutant.
- 470. Discuss BOD and COD tests.
- 471. What steps must be undertaken by industries to reduced water pollution?
- 472. How soap has advantage over detergent?
- 473. How household products contributes in water pollution?
- 474. Discuss how the animal waste contribute in water pollution.
- 475. Fertilizers are helpful but on the other side these are catastrophic for water on earth. Justify.

476. How pesticides cause water pollution?

WATERBORNE DISEASES

- 477. Define waterborne diseases.
- 478. Why do we face waterborne diseases?
- 479. Name two diseases which are viral and cause by drinking water?
- 480. What is hepatitis?
- 481. What is meant by fluorisis?
- 482. How jaundice is caused?
- 483. How typhoid is caused?
- 484. What is dysentery?
- 485. Which of the bacteria causes the cholera?
- 486. How can we control polio give suggestions?
- 487. Discuss bacterial infections.
- 488. What are symptoms of typhoid fever?
- 489. Discuss some viral infections.
- 490. How water is made suitable for drinkable and other purposes.

EFFECTS OF WATER POLLUTION

- 491. Define eutrophication.
- 492. Discuss chemical contamination.
- 493. Which nutrients causes eutrophication?
- 494. How hot water released from industries is catastrophic for aquatic life?
- 495. Mercury in water is harmful for aquatic and as well as human life. Justify.

CHAPTER NO 16.

CHEMICAL INDUSTRIES

INTRODUCTIO AND METALLURGIC OPERATIONS

- 496. Discuss how chemical industries plays a vital role in development of a country.
- 497. Define the branch METALLURGY.
- 498. Differentiate between mineral and ore.
- 499. What is gangue.
- 500. Discuss the occurrence of metals in earth crust.
- 501. What are the metallurgic operations and why they are important?
- 502. Why extraction of every other metal needs different process?
- 503. List some steps in determining the metallurgic process for metals?
- 504. Draw the flowsheet diagram of metallurgy process.
- 505. What is the first and foremost step in metallurgy?
- 506. Discus gravity separation.

- 507. For which kind of impurity gravity separation is helpful?
- 508. What is froth floatation process.
- 509. Draw the diagram for froth floatation process and gravity separation.
- 510. Why a small amount of coke is required in the smelting processs?

EXTARCTION OF METAL

- 511. Explain the process roasting with two example.
- 512. Name the various metallurgical operation.
- 513. Hpw roasting is carried out?
- 514. Define concentration process, is it used in metallurgy of copper?
- 515. Describe the following with example. (roasting, smelting, and flotation)
- 516. What is matte?
- 517. Write the main reactions involved in smelting of copper ore.
- 518. Why lime is added in the smelting process?
- 519. How slag and matte are removed from the blast of furnace?
- 520. Mention the chemical reaction for the formation of metallic copper in the bessmerization process.
- 521. Why anode is eaten up in electro-refining process?
- 522. What do you mean by anode mud?
- 523. Discuss bessemerization.
- 524. Write important reactions involved in bessemerization of copper ore.
- 525. How as a chemist you can build your career in industries?
- 526. Relate the study of chemistry to careers in industry.
- 527. Discuss electro-refining.
- 528. How an electrochemical cell helps in purification of a metal? Give example.
- 529. Name the two ways by which a pure copper can be obtained from impure copper.

SOLVAY'S PROCESS

- 530. Make a list of raw materials used in Solvay process.
- 531. How NaHCO3 is converted into NaCO3?
- 532. Describes the principal of solvay's process.
- 533. Write advanteges of solvay's process.
- 534. Discuss the Solvay's process.
- 535. Why only NaHCO3 precipitate when CO2 is passed through the ammonical brine?
- 536. Which raw materials are required for the formation of NaCO3?
- 537. How CO2 is prepared in the Solvay's process.
- 538. Give the advateges of Solvay's process.

- 539. What happened when ammonium carbonatete is heated with steam?
- 540. Write the important reactions involved in Solvay's process.
- 541. How ammonia is recoverd in solvay's process?
- 542. Draw the flowsheet diagram for Solvay's process.
- 543. What is calcination.

UREA FORMATION

- 544. Outline the basic reactions that take place in the synthesis of urea.
- 545. How many steps are involed in the formation of urea?
- 546. What role is played by pine oil in the froth flotation process.
- 547. How ammonia is prepared for synthesis is urea?

548.

- 549. What happens when ammonium carbamate is distilled with steam?
- 550. What is the percentage of nitrogen in urea?
- 551. Make a list of raw materials used in the synthesis of urea.
- 552. Define granulation.
- 553. List important uses of urea.
- 554. Draw the flowsheet diagram of urea formation.
- 555. Calculate the percentage of nitrogen in urea.
- 556. Differentiate between synthetic and organic fertilizers.
- 557. How can one make organic fertilizer at home?
- 558. What is NPK ratio?

PETROLEUM INDUSTRY

- 559. Define petroleum.
- 560. Discuss the origin of petroleum.
- 561. How petroleum is formed?
- 562. Name the process by which fractions are obtained from petroleum.
- 563. What is the name of process used in separating crude oil?
- 564. Write the name of fractions that represents gases.
- 565. Which fraction represents liquids with the lowest boiling points?
- 566. Which fraction will contain the shortest chain molecules?
- 567. What are the different classes of fire?
- 568. Why every class of fire needs different method to control it?
- 569. What are the important fractions of petroleum?
- 570. Write names of fractions and their uses?