XI STD – CHEMISTRY

QUESTION BANK

1.CHEMICAL CALCULATIONS

2 or 3 marks

1. What is Avogadro's number? (2)
2. Define mole (3)
3. What is stoichiometry? (11)
4. Define oxidation in terms of electronic concept (13)
5. Define reduction in terms of electronic concept (14)
6. Define oxidation number (14)
7. Define molarity (20)
8. Define molality (21)
9. Define normality (20)
10. Define mole fraction (21)
11. What are the methods can be used to determine equivalent mass? (26)
12. How can you determine the amount of substance by volumetric analysis? (24)
13. What is equivalent mass of acid? (28)
14. what is equivalent mass of base? (29)
15. What is equivalent mass of salt? (29)
16. What is equivalent mass of oxidizing , reducing agent? (29,30)
17. Calculate the molecular mass of $C_{12}H_{22}O_{11}$
18. Calculate the no. of moles of 5.68 gm. of iron.
19. What is the effect of temp. on molality and molarity?
20. An atom of an element is 10.1 times heavier than the mass of a carbon atom , its mass in a.m.u.?

5 MARKS:

21. How will you calculate the molecular mass of a volatile compound using Victor Meyer's method?
22. Calculate Embirical formula and molecular formula (6-11)
23. How will you determine the equivalent mass of elements by hydrogen displacement method?
24. How will you determine the equivalent mass of elements by oxide method? (27)
25. How will you determine the equivalent mass of elements by chloride method? (28)

2.GENERAL INTRODUCTION TO METALLURGY

2 or 3 MARKS:

26. Distinguish between ore and mineral with suitable example (37)
27. What are the different method of concentration of ore? (40)

28. Define metallurgy (42)
29. What is calcinations? Give example (43)
30. What is roasting? (42)
31. What is anode mud? (45)
32. What are the major steps involved in the metallurgical process? (42)
33. What is gravity separation? (40)

3 Or 5 MARKS:

34. Explain froth floatation process with near diagram (40)
35. How electrolytic separation process is useful in the separation of magnetic impurities from non Magnetic ores? Draw the diagram (41)
36. How the impurities of ore are removed by chemical method? (41)
37. What is smelting? Explain the process (43)
38. What is zone refining ? Explain the process (46)
39. How nickel is extracted by Mond's process? (47)
40. Explain about electrolytic refining (45)
41. Explain about Bessimerisation process (44)

3.ATOMIC STRUCTURE –I

2 or 3 MARKS:

42. What is Zeeman effect? (54)
43. What is stark effect? (54)
44. State Hund's rule (59)
45. State Pauli's exclusion principle (58)
46. What are the defects of Rutherford's model? (52)
47. Write electronic configurations, of Cr, Cu, Zn?
48. Define Aufbau's Principle. Which of the following orbitals are possible. 1 s, 1 p, 2 s, 3 d, 3 f
49. Explain Hund's rule of maximum multiplicity by taking an example of phosphorous.
50. Why are Bohr's orbits called Stationary States?
51. What is the difference between atomic mass and mass number?
52. Explain why the uncertainty principle is significant only for the microscopic particles and not for the Macroscopic particles?
53. Why half-filled and fully filled orbitals are extra stable?
54. Why config of 'Cr' is 3d5 4s1 and not 3d4 4s2 and 'Cu' is 3d10 4s1 and not 3d9 4s2?
55. Give differences between orbit and orbital.
56. Give important postulates of Bohr's model of an atom.
57. Discuss Planck's Quantum theory of Radiation.
58. Using the s, p, d, f, notations describe the following quantum no.
    a. n=1, l=0 (c) n=4; l=3 (d) n=4; l=2
    b. n=3, l=2 (d) n=5; l=4 (e) n=6; l=4
59. Discuss drawbacks of Rutherford's Model.
60. What do you understand by an atomic orbital? Briefly describe the shapes of s, p & 'd' orbitals?
61. State and explain Aufbau's principle, Pauli's exclusion principle.
62. Which of the following orbitals are not possible? 1p, 2s, 2p, 3f, 3d, 4f, 4d

3 or 5 MARKS:

63. Explain Aufbau principle (59)
64. What are the postulates of Bohr's theory of atom? (52)
65. Explain the various quantum numbers (54)

66. Explain Rutherford nuclear model of an atom (51)
67. What are the limitations of Bohr's theory? (53)

4.PERIODIC CLASSIFICATION

2 or 3 MARKS:

68. Why noble gases have zero electron gain enthalpy? (85)
69. Out of fluorine and chlorine, which has greater electron gain enthalpy? (85)
70. Define electronegativity (86)
71. Why boron has lower ionization energy than Beryllium? (88)
72. What is periodic law? (67)
73. What is modern periodic law? (69)
74. What is isoelectronic? (80)
75. Define ionization energy (81)
76. Define electron affinity (84)
77. Electron affinity of Be and Mg is zero. Why? (89)
78. What are Dobereiner's triads?
79. Give general electronic configuration of 'd'-block and 'f'-block elements.
80. What are the defects of long form of the periodic table?
81. What is the cause of periodicity?
82. What are successive lonization enthalpies?
83. Why Ionization enthalpy of 'Be' is more than 'B' and of 'N' is more than 'O' explain?
84. Why electron gain enthalpies of Noble gases are positive while those of 'Mg' and 'P' are zero?
85. Why electron gain enthalpy of flourine is less negative than that of chlorine?
86. What are iso electronic species? How are their sizes vary in iso electronic series?
87. Which of the following will have the largest and smallest size and why? Cl, Cl-1, Al, Al3+
88. Why d- and f-block elements are less electropositive than group 1 and 2 elements?
89. What is diagonal relationship? Explain it with the help of 'Be' and 'Al'.
90. What is ionisation enthalpy? On what factors it depends?
91. What is electron gain enthalpy? On what factors it depends. How it varies in a group and in a period?
92. How will you justify presence of 18 elements in 5th period and presence of 32 elements in 6th period?

3 Or 5 MARKS:

93. What are the difference between electron gain enthalpy and electro negativity? (87)
94. Explain the factors which influence ionization enthalpy (83)
95. Explain the factors which influence electron affinity (86)

5. GROUP 1S BLOCK ELEMENTS

2 or 3 MARKS:

96. What are isotopes? Mention the isotopes of hydrogen. (96)
97. Mention the uses of deuterium. (99)
98. How do you convert para hydrogen and ortho hydrogen? (101)
99. How is hydrogen peroxide prepared in the laboratory? (104)
100. How does heavy water react with metals? (103)
101. Write about reducing property of hydrogen peroxide (105)
102. Write about oxidizing property of hydrogen peroxide (105)
103. Mention the uses of hydrogen peroxide (106)

104. What is photoelectric effect? (108)
105. What are the uses of sodium? (112)
106. Mention the uses of heavy water (104)
107. How does deuterium react with nitrogen and metals? (99)
108. How is hydrogen peroxide solution concentrated? (105)
109. Write the names of isotopes of hydrogen. What is the mass ratio of these isotopes?
110. How does H2O2 behave as a bleaching agent?
111. H2O2 act both as oxidising and reducing agent, Justify it with the help of examples.
    i) How does H2O2 reacts with KMnO4 in alkaline medium?
    ii) How does H2O2 reacts with K2Cr2O7 in acidic medium?
112. Give uses of heavy water. Can heavy water be used for drinking?
    i. How water act both as an oxidising and reducing agent? Give examples.
    ii. What is coal gasification?
113. Alkali metals have the lowest ionisation enthalpy in each period. Why?
114. The second ionisation enthalpies of alkali metals are very high?
115. All the alkali metals impart characteristic colour to flame. Why?
116. Why alkali metals are soft and have low m.pt and b.pt.?
117. Alkali metals are very reactive. Justify with the help of examples.
118. Alkali metals are kept in kerosene oil why?
119. When alkali metals dissolves in liquid ammonia, the solution can acquire different colours.
120. Why lithium shows anomalous behaviour?
121. Why lithium is the strongest reducing agent where as its ionization enthalpy is highest?
122. What is polarisation discuss it by taking example of lithium?
123. The hydroxides of alkali metals are strongly basic why?

3 or 5 MARKS:

124. Explain the preparation of heavy water (101)
125. Explain how liquid hydrogen can be used as a fuel (106)
126. How is sodium extracted? Explain with a diagram (110)
127. How is lithium extracted? (109)
128. Differentiate between ortho and para hydrogen (100)

6. GROUP 2S BLOCK ELEMENTS

2 or 3 marks

129. What are the important ores of Magnesium? (119)
130. How is Gypsum prepared? Mention its uses (122)
131. What are the diagonal relationship between Be and Al? (119)
132. What is slaking of lime? (122)
133. How is plaster of paris prepared? (123)
134. Mention the uses of plaster of paris (123)
135. Although IE1 values of alkaline earth metals are higher than those of alkali metals, the IE2 values of alkaline earth metals are much smaller than those of alkali metals why?
136. Calcium and strontium give characteristic colour to the flame but beryllium and

magnesium do not give any characteristic flame colours. Why?

137. Hydration enthalpies of alkaline earth metals are larger than those of the corresponding alkali metals. Why?
138. Why beyllium and magnesium form complexes?
139. The hydroxides of alkaline earth metals are less basic than alkali metals of the corresponding periods. Why?
140. (i)BeCl2 can be easily hydrolysed why?
(ii)What is the difference between quick lime, Slaked lime and lime water?
141. (i)Why are halides of beryllium polymeric?
(ii)Explain why can alkali and alkaline earth metals not be obtained by chemical reduction methods?
142. . What happens when
    a. 'Mg' is burnt in air. (ii) Quick lime is heated with silica
    b. Chlorine reacts with Slaked lime. (iv) Calcium nitrate is heated.
143. Why does the solubility of alkaline earth metal carbonates and sulphates decrease down the group?
144. Why does solubility of alkaline earth metal hydroxides increase down the group?
145. How does quick lime reacts with water, carbon dioxide and phosphorous pentaoxide.
146. How is lime stone manufactured and how it reacts with HCl and H2SO4?
147. Discuss chemical properties of Slaked lime.
148. How beryllium behaves differently as compare to magnesium or compare physical and chemical properties of beryllium and calcium.

5 MARKS:

149. How is magnesium extracted from its ore? (119)

7.P- BLOCK ELEMENTS

2 or 3 MARKS:

150. Mention the nature of hydrides in P block elements (130)
151. What are the uses of Borax (132)
152. Mention the uses of Nitrogen compounds (140)
153. How is nitric acid prepared in the lab? (140)
154. What are acidic oxides? (143)
155. What are basic oxides? (144)
156. What are amphoteric oxides? (144)
157. Write note on peroxides (144)
158. Why atomic radii of 'Ga' is smaller than 'Al'?
159. BCl3 is known but Tl Cl_3 is not known. Why?
160. The metallic character increases from boron to aluminium and then decreases from aluminium to thallium. Explain.
161. Boron is a non-metal where as 'Al' is a metal. Why?
162. What is inert pair effect?
163. The reducing character of elements of gr. 13 goes on decreasing down the group. Why?
164. BCl_3 acts as a lewis acid. How?
165. Discuss structure of diborane.
166. Why BCl3 is a stronger lewis acid than BF_3?
167. BCl_3 exists as a monomer where as AlCl3 exists as a dimer why?
168. Borazine is more reactive than benzene. Why?

169. Why alumina cannot be reduced by Carbon?
170. Why anhydrous aluminium chloride has a lower melting point than anhydrous aluminium flouride?
171. Why boron and thallium does not form B3+ and Tl3+ ions?
172. (i)Why ionisation enthalpy of 'Ga' is higher than that of 'Al'?
173. (ii)Thallous compounds (Tl+) are more stable than thallic (Tl3+) compounds. Why?
174. Boron and Silicon are diagonally related to each other. Give chemical reactions to prove.
175. Which allotropes of Carbon acts as an abrasive and which as a lubricant?
176. Why is diamond denser than graphite?
177. What are Silicones?
178. Diamond is covalent, yet it has high melting point. Why?
179. Why does carbon not form either C4+ or C4- ions?
180. Give the differences in structures of the following pair of compounds: CO_2 and SiO_2.
181. Why elemental Silicon does not form a graphite like structure, as carbon does? .
182. Write a short note on fullerenes.

3 or 5 MARKS:

183. Explain inert pair effect with suitable example. (128)
184. How borax bead test is helpful in identifying basic radicals in qualitative analysis? (133)
185. Discuss the structural differences between diamond and graphite (134)
186. Write a short note on fixation of nitrogen (139)
187. How nitric acid is prepared by Ostwald process? (141)
188. Explain the laboratory preparation of ozone (145)
189. Which is considered to " earth's protective umbrella"? (147)
190. How is ammonia manufactured by Haber's process? (138)
191. How is molecular oxygen important for all oxygenated animals? (141)

8.SOLID STATE-1

2 or 3 MARKS:

192. Define unit cell (156)
193. How many types of cubic unit cell exists? (158)
194. What are miller indices? (161)
195. What are anisotropic and isotropic? (153,154)
196. How many type of cubic unit cell exists? (158)

3 or 5 MARKS:

197. Give the distinguishing features of crystalline solids and amorphous solids (153,154)
198. Draw a neat diagram for sodium chloride structure and explain (159)
199. Draw a neat diagram for cesium chloride structure and explain (160)

9. GASEOUS STATE

2 or 3 MARKS:

200. Define Boyle's law and Charle's law (171)
201. Define Graham's law of diffusion (172)
202. Write the significance of Vanderwaal's constants (184)
203. Write the limitations of Vanderwaal's equation (185)
204. Define Joule Thomson's effect (192)
205. What is meant by inversion temperature? (193)
206. State Dalton's law of partial pressure (175)

207. What is critical temperature? (186)
208. What is critical pressure? (186)
209. What is critical volume? (186)
210. What are the conditions for liquefaction of gases? (193)
211. How is gas constant 'R' related to work?
212. Why drop of a liquid is spherical in shape?
213. What is laminar flow?
214. Derive Ideal gas equation.
215. CO_2 is heavier than N_2 and O_2 gases present in the air but it does not form the lower layer of the atmosphere. Explain?
216. What is an ideal gas? Why do real gases deviate from ideal behaviour?
217. Will water boil at higher temp at Sea level or at the top of mountains and why?
218. Why does the temp. of the boiling liquid remains constant even though heating is continued?
219. What is liquefacation of a gas? Discuss Andrew's isotherms far CO_2 and important conclusions.
220. How will you determine pressure of a dry gas by using Dalton's law of partial pressures?
221. Differentiate between diffusion and effusion. What is the cause of diffusion?

3 or 5 MARKS:

222. Deduce the relationship between critical constants and Vanderwaal's constants (188)
223. Describe Linde's process of liquefaction of gases (194)
224. Describe Claude's process of liquefaction of gases (195)
225. Derive Vanderwaal's equation of state (180)
226. Explain Andrews Isotherm of Carbondioxide (186)
227. Explain Thomson's experiment of carbondioxide (187)

Volume – II

10. CHEMICAL BONDING

2 or 3 MARKS:

228. What is the structure of $BeCl_2$? (2)

229. What is octet rule? Give an example (2)
230. What is meant by electrovalent bond? (3)
231. What is meant by hybridization? (25)
232. Define resonance (25)
233. What is covalent bonding? (4)
234. What are the different types of chemical bonding? (5)
235. What is coordinate or dative bond? (27)
236. why do atoms combine?
237. What is the significance of Lewis Symbols?
238. Give structure of BrF_5
239. Why H_2O is liquid and H_2S is a gas?
240. Why NH_3 is liquid and PH_3 is a gas?
241. Boiling point of p-nitrophenol is more than O-nitrophenol why?
242. How is paramagnetic character of a compound is related to the no. of unpaired electrons?
243. Describe a co-ordinate bond with an example. How does it differs from a covalent bond?
244. How is MgF_2 and Al_2O_3 formed?
245. What is an Octet rule? What are its limitations?
246. Which out of NH_3 and NF_3 has higher dipole moment and why?
247. Draw molecular orbital diagram for N_2^+ molecule.
248. HCl is a covalent compound but it ionises in the solution?
249. The molecule of CO_2 is linear whereas that of $SnCl_2$ is angular why?
250. Give molecular orbital energy level diagram of CO. Write its electronic configuration, magnetic behaviour and bond order.
251. How is ionic bond formed? On what factors it depends?

3 or 5 MARKS:

252. Discuss the important properties of electrovalent compounds (11)
253. Calculate the lattice energy of NaCl using Born Haber cycle (8,9)
254. Explain the important properties of covalent compounds (13)
255. Discuss the partial covalent character in ionic compounds using Fajan's rule (14)
256. Discuss the shapes of the following molecules NH_3, H_2O, SO_2, SF_6 (19,20)
257. Explain the consequences of resonance with suitable example (25,26)
258. Give characteristics of ionic compounds.
259. How is covalent bond formed discuss with the help of N_2, CH_4, C_2H_2?
260. Give postulates of VSEPR theory.
261. Discuss types of covalent bonds with the help of example. Why pi-bond can't exist independently?
262. Discuss the factors affecting bond enthalpy
263. Discuss the partial ionic character of covalent bond by taking an example.
264. Give applications of dipole moment.
265. Discuss partial covalent character of ionic bonds.
266. What is hybridisation? Discuss facts about hybridisation.
267. Why density of water is maximum at 277K? Discuss.
268. Why KHF_2 exists while $KHCl_2$ does not?
269. Which is more polar and why, CO_2 or N_2O?

11. COLLIGATIVE PROPERTIES

2 or 3 MARKS:

270. What is colligative property? Mention them (31)
271. Define relative lowering of vapour pressure (33)
272. What do you understand by molal elevation of boiling point? (42)
273. Define osmosis and osmotic pressure (45)
274. What are the characteristics of osmatic pressure? (46)
275. Define Raoult's law (32)
276. What is Boyle's –Vont Hoff law (46)
277. What is Cherle's – Vont Hoff law (46)
278. Define Vant Hoff factor (48)
279. What are isotonic solution? (46)
280. What are the advantages of Berkley Hartley method? (47)

3 or 5 MARKS:

281. Explain the determination of relative lowering of vapour pressure by Ostwald walker method (34)
282. Describe the determination of depression in freezing point by Beckmann method (39)
283. Explain the determination of elevation of boiling point by Cottrell method (44)
284. Explain the laws of osmotic pressure and its determination by Berkley Hartley method (47)

12. THERMODYNAMICS-I

2 or 3 MARKS:

285. What are homogeneous and heterogeneous system? (56)
286. Define zeroth law of thermodynamics (61)
287. Define adiabatic process (58)
288. Write the differences between endothermic and exothermic process (60)
289. Define first law of thermodynamics (64)
290. What are intensive and extensive properties? (56)
291. Define enthalpy (65)
292. Define enthalpy of combustion (68)
293. Define enthalpy of neutralization (70)
294. what is meant by extensive and intensive properties?
295. What is meant by State function and path function?
296. Express the change in internal energy of a system when 'W' amount of work is done by the system and 'q' amount of heat is supplied to the system. What type of system would it be?
    i) Is decrease in enthalpy the only criterion for spontaneity? Justify with example.
    ii) Is tendency towards maximum randomness the sole criterion for spontaneity?
297. Justify Hess's law of constant heat Summation with suitable example.
298. Absolute value of internal energy cannot be determined. Explain?
299. Discuss the effect of temperature on the spontaneity of an exothermic and endothermic reaction.

3 or 5 MARKS:

300. Describe a bomb calorimeter and explain how heat of formation of an organic compound is determined (68)
301. Distinguish between reversible and irreversible process (59)

13.CHEMICAL EQUILIBRIUM-I

2 or 3 MARKS:

302. Define law of mass action (80)
303. What are reversible and irreversible reactions? (76)
304. What are homogeneous and heterogeneous equations? (80)
305. Chemical equilibrium is dynamic in nature. Why? (78)
306. What is equilibrium constant? (82)

3 or 5 MARKS:

307. Explain the characteristics of a chemical equilibrium (78)
308. Derive an expression for the Kp, Kc for the equilibrium $H_2+I_2 \leftrightarrow 2HI$ (85)
309. Derive an expression for the Kp, Kc for the dissociation of PCl_5 (87)
310. What are the characteristics of equilibrium constant? (91)

14.CHEMICAL KINETICS-1

2 or 3 MARKS:

311. Define rate law (99)
312. Define order (100)
313. What is molecularity? (101)
314. Define rate of a reaction (96)
315. Define rate constant (99)
316. What are the differences between rate of reaction and rate constant of reaction? (101)

3 OR 5 MARKS:

317. Write the differences between order and molecularity (101)
318. Describe the factors on which the rate of reaction depends (98)

15.BASIC CONCEPTS OF ORGANIC CHEMISTRY

2 or 3 MARKS:

319. What is catenation (109)
320. Define homolytic and heterolytic fission (128)
321. What is substitution reaction? (129)
322. What is addition reaction? (130)
323. What is elimination reaction? (130)
324. What is polymerization reaction? (131)
325. What is condensation reaction? (131)
326. Define reduction and oxidation reaction (132)
327. What are acid and basic hydrolysis? (131,132)
328. Note on carbonium ion and carbanion (134)
329. What is a homologous series?
330. Define structural isomerism. Give structural isomers of butane.
331. Explain metamerism with example.
332. What is tautomerism? Give example.
333. Give all possible isomers of Hexane.
334. What is positive and negative inductive effect? Give examples.
335. What is electromeric effect? Discuss it with the help of an example.
336. Give resonating structures of $C_6H_5NH_2$ molecule.
337. What is homolytic and heterolytic fission?
338. What are free radicals? Which is the most stable free radical and why?
339. What is carbocation? Why tertiary carbocation is most stable?
340. What is carbanion? Which is the most reactive carbanion and why?

341. What are electrophiles and nucleophiles and what are their types? Discuss in detail.
342. What is resonance effect? Discuss positive and negative (+R; -R) effect with example.
343. What is hyperconjugation? Give applications of hyperconjugation.
344. Discuss Addition reaction and Elimination reaction in detail.

3 or 5 MARKS:

345. What are the characteristics of organic compounds? (113)
346. What are homologous series? Explain their characteristics (113)
347. Distinguish between electrophiles and nucleophiles (133)
348. Explain the types of isomerism (126)
349. Explain the classification of organic compounds (109)
350. Explain about inductive effect (135)
351. Explain about resonance effect (136)

16.PURIFICATION OF ORGANIC COMPOUNDS

2 or 3 marks

352. What are various methods used for purification and separation of organic compounds? (140)
353. What is sublimation? (142)
354. What is chromatography? (146)
355. What are the difference between paper and thin layer chromatography? (149)
356. What are different types of distillation? (143)
357. What is crystallization? (141)
358. What are the different stages of crystallization? (141)
359. What are the adsorbents used in column chromatography? (147)
360. What is an eluent? (147)
361. What are the advantages of distillation under reduced pressure? (145)
362. What are the types of paper chromatography? (148)

3 or 5 MARKS:

363. Explain the purification of compounds by using thin layer chromatography (147)
364. Explain the general characteristics of organic compounds (140)
365. Explain the procedure involved in steam distillation (144)
366. Explain the principle involved in the distillation under reduced pressure (145)
367. Explain about column chromatography (147)
368. Explain about paper chromatography (148)

17.DETECTION AND ESTIMATION OF ELEMENTS

(No book back question and answers. Only sums. just refer)

2 or 3 MARKS:

369. How do you detect the presence of sulphur in an organic compound? (153)
370. How do you detect the presence of halogen in an organic compound? (153)

371. How do you detect the presence of oxygen in an organic compound? (152)

3 or 5 MARKS:

372. How do you detect the presence of carbon and hydrogen in an organic compound? (151)
373. Write the chemical equations involved in Lassigne test for nitrogen (152)
374. Explain the estimation of carbon and hydrogen by Lebig's combustion method (154)
375. Explain the estimation of nitrogen by Kjeldahl's method (157)
376. Explain the estimation of sulphur by Carius method (160)
377. Explain the estimation of halogen by Carius method (161)

18.HYDROCARBONS

2 or 3 MARKS:

378. What is ozonolysis? (180)
379. Define Markovnikov's rule (179)
380. Mention the uses of ethylene (181)
381. Mention the uses of acetylene (188)
382. What is wurtz reaction? (170)
383. Write Kolbe's electrolytic method (171)
384. What is Finkelstein's reaction (173)
385. Define aromatization (174)
386. What is epoxidation? (181)
387. Write Diels Alder reaction (181)
388. What are test for acetylene (188)
389. What happens when acetylene is passed through red hot tube? (188)
390. What is hydroboration? (180)
391. How is ethylene hydrated? (179)
392. What are Saturated and unsaturated hydrocarbons?
393. How are alkanes prepared by Grignard's reagent?
394. How will you convert acetaldehyde to ethane and acetone to propane?
395. Boiling points of isomeric alkanes goes on decreasing with increased branching. Why?
396. Alkanes with even no. of carbon atoms have high melting point as compare to alkanes with odd no. of carbon atoms why?
397. Give mechanism of sulphonation of alkanes?
398. n-pentane has higher boiling point than neo pentane. Explain.
399. Mention primary, secondary and tertiary carbons and hydrogens in the following compound.
400. Eclipsed conformation is less stable than staggered conformation of ethane. Explain.
401. What is geometrical isomerism and what is its cause?
402. What are the necessary conditions for the geometrical isomerisation?
403. How are alkenes prepared by Kolbe's Electrolytic process?
404. Why alkenes undergo electrophilic addition and not electrophilic substitution reaction?
405. Explain and Justify Markownikoff's rule.
406. Give ozonolysis reaction of ethene.
407. Discuss Kolbe's electrolytic method to prepare acetylene.
408. Convert Chloroform into acetylene.
409. Convert methane into acetylene.
410. Alkynes do not exhibit geometrical isomerism while alkenes do so why?

411. Alkynes are less reactive than alkenes towards electrophilic addition reaction why?
412. Convert acetylene into ethanol.
413. Discuss structure of alkyne. .
414. (i)Give mechanism of addition of halogens to alkynes.
415. (ii)Why alkynes undergo nucleophilic addition reactions while simple alkenes do not?
416. (i)How will you convert acetylene into oxalic acid?
417. (ii)How will you convert propyne into ethanoic acid?
418. (iii)How will you convert acetylene into acrylic acid?
419. (i)How will you distinguish between Ethane and Ethyne? Give reaction.

19.AROMATIC HYDROCARBONS

2 or 3 MARKS:

420. Define aromaticity (193)
421. What is Friedel craft's reaction? (195)
422. Mention the uses of benzene (199)
423. What is wurtz fittig reaction? (213)
424. Write briefly resonance in benzene (201)
425. How will you convert n-hexane to benzene?
426. How will you convert benzene to benzoic acid?
427. How will you convert benzene to benzaldehyde?
428. What are activating groups? Explain it with example.
429. Give mechanism of nitration of chlorobenzene.
430. What are electron withdrawing groups? Why are they meta-directing?
431. Give mechanism of chlorination of Nitrobenzene.
432. Give mechanism of Friedal-craft acylation reaction.
    i. How will you convert benzene to benzophenone?
    ii. How will you convert benzene to acetophenone?
433. Give mechanism of Sulphonation of benzene.
    i. Give mechanism of nitration of benzene.
    ii. How will you prepare benzene from diene's?
434. How is structure of benzene deduced? Discuss in detail.
435. Discuss evidences in favour of resonating structure of benzene.
436. Why does benzene undergo electrophilic substitutions reactions easily and nucleophilic substitutions with difficulty?
437. How would you convert following compounds into benzene? I) Ethyne (ii) Ethene (iii) Hexane

3 or 5 MARKS

438. Explain about the structure of benzene (198)

20.ORGANIC HALOGEN COMPOUNDS

2 or 3 MARKS:

439. What is Hunsdiecker reaction? (206)

440. What is Finkelstein reaction? (206)
441. What is swartz reaction? (207)
442. How is DDT prepared? Mention its uses (214)
443. What is fittig reaction? (213)
444. What are Grignard reagent? (215)
445. Mention the uses of alkyl halides (211)

3 or 5 MARKS:

446. Discuss SN1 reaction mechanism (209)
447. Discuss SN2 reaction mechanism (208)
448. Discuss E1 mechanism (210)
449. Discuss E2 mechanism (210)
450. Explain synthetic uses of methyl magnesium iodide (216)
451. What are the general methods of preparation of alkyl halides (206)

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"ALL THE BEST"