

XII CHEMISTRY

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Class - XII

Unit – 1 (Solid State)

1 mark questions

1. Why amorphous solids are called pseudo solids or super cooled liquids?
2. Why crystalline solids are anisotropic?
3. How many tetrahedral and octahedral voids are there for each sphere?
4. What is radius ratio?
5. How ionic solid can be distinguished from a metallic solid?
6. What are F-centres?
7. What will happen to conductivity of metals and semiconductors, when there is increase in temp.?

2 marks questions

8. What is Schottky defect? What is its effect on the density of crystal?
9. What is the radius ratio for cation and anion to occupy tetrahedral sites?
10. Differentiate schottky and Frenkel defect.
11. What is the difference between n-type and p-type semiconductors? Give one example of each.
12. Why some minerals of iron pyrites are called fool's Gold?
13. Define ferromagnetism and Ferrimagnetism and show alignment of their magnetic moments.
14. Explain the term 'unit cell' and 'crystal lattice'.

3 marks questions

15. Analysis shows that a metal oxide has the empirical formula $M_{0.98} O_{1.00}$. Calculate the percentage of M^{2+} and M^{3+} ions in the crystal.
16. What is disorder or imperfection? Explain any two types of imperfections in solids.
17. An element crystallizes in bcc structure. If edge length of cell is 1.469×10^{-8} cm and density 19.3g/cm^3 , then calculate the atomic mass of the element.

Class - XII

Unit – 2 (Solutions)

(1 mark questions)

1. In deep sea diving, why the condition "the bends" occur?
2. How is the molarity different from the normality?
3. Why molality is considered better for expressing the concentration as compared to molarity?
4. Why "Anoxia" occurs at high altitudes?
5. What is the similarity between Raoult's law and Henry's Law.
6. What are azeotropes?
7. What are anti-freeze solutions? Give one example.

(2 marks questions)

8. Why common salt is used to clear the snow on the roads?
9. How plasmolysis is different from hemolysis?
10. What is Van't Hoff factor? Give its value for solutes undergoing association and dissociation in solution.
11. What is Henry's law? Give its 2 limitations.
12. Differentiate Ideal and Non-ideal solutions.
13. What is relative lowering in vapour pressure? Which out of lowering in V.P. and relative lowering in V.P, is a colligative property?
14. What happened to peeled egg when dipped in water? Explain.

(3 marks questions)

15. How elevation in boiling point is a colligative property? Explain.
16. Addition of 1.286 gm of a compound to 100 ml. of benzene (density 0.879 g/ml) lowers the freezing point from 5.51°C to 5.03°C. If K_f for benzene is 5.12 K kg/mol, calculate the molar mass of the compound?
17. Non-ideal solutions show positive and negative deviations from Raoult's law. What are these deviations and why they are caused?

Class - XII

Unit – 3 (Electro chemistry)

(1 mark questions)

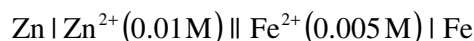
1. What happens to the electrical conductance of electrolytic conductor and metallic conductor, with increase in temp.
2. What is salt bridge? Give its two functions.
3. Calculate the cell potential for the cell :
 $\text{Mg(s)} | \text{Mg}^{2+} (0.1 \text{ M}) || \text{Cu}^{2+} (1 \times 10^{-3} \text{ M}) | \text{Cu(s)}$
Given $E^\circ (\text{Cu}^{2+}/\text{Cu}) = +0.34 \text{ V}$, $E^\circ (\text{Mg}^{2+}/\text{Mg}) = -2.37 \text{ V}$
4. Why dry cell does not have an indefinite life?
5. Why primary batteries or cells are not chargeable?
6. Name the cell which were used in Apollo space programme.
7. What is the chemical formula of rust?

(2 marks questions)

8. Why does the conductivity of a solution decreases with dilution?
9. Give the importance of fuel cells over ordinary batteries.
10. Give the factors which affect corrosion.
11. Differentiate E.M.F. and potential difference.
12. Give the relation between conductivity and molar conductivity of a solution.
13. What are super-conductors? Give examples.
14. Explain the ohm's law.

(3 marks questions)

15. What is an electrochemical series? Give the applications of electrochemical series.
16. Give differences between electrochemical cell and Electrolytic cell.
17. Calculate the e.m.f. of the cell at 25°C



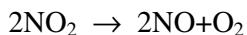
$$E^\circ (\text{Zn}^{2+} | \text{Zn}) = -0.763\text{V} \text{ and } E^\circ (\text{Fe}^{2+}/\text{Fe}) = -0.44\text{V}$$

Class - XII

Unit – 4 (Chemical Kinetics)

(1 mark questions)

1. What is the significance of negative sign in case of expressing rate of reaction in terms of reactants?
2. Why does the rate of reaction not remain constant throughout?
3. A first order reaction is found to have a rate constant, $k=5.5 \times 10^{-14} \text{ S}^{-1}$. Find the half life period of the reaction.
4. What is first order reaction?
5. What is collision frequency and what are effective collisions?
6. A large number of colliding molecules have energy more than threshold energy for a reaction, even then reaction is slow. Why?
7. Express the rate of the reaction :



in terms of the concentration of reactants and products.

Class - XII

Unit-4 (Chemical Kinetics)

(2 marks questions)

8. What is zero order reaction? Give example.
9. Calculate the overall order of a reaction, which has the rate expression :
$$\text{Rate} = k[\text{A}]^{\frac{3}{2}} [\text{B}]^{-1}$$
10. What is the difference between order and molecularity.
11. A first order decomposition reaction takes 40 minutes for 30% decomposition. Calculate its $t_{1/2}$ value.
12. Give differences between rate of a reaction and rate constant.
13. A reaction is of first order w.r.t. reactant A and of second order w.r.t. reactant B. How is the rate of this reaction affected when:
 - (i) the conc. of B alone is increased to three times.
 - (ii) the conc. of A as well as B are doubled.

14. What is half life period. Derive an expression for half life period of a first order reaction.

(3 marks questions)

15. What is rate determining step? Show that the slowest step in the mechanism of the reaction largely determines the rate of the reaction.
16. What are the factors, influencing the rate of chemical reaction? Explain.
17. Give the integrated rate expression for zero order reaction.

Class - XII

Unit – 5 (Surface Chemistry)

(1 mark questions)

1. How is positive adsorption differs from negative adsorption?
2. Why activated charcoal or a mixture of adsorbent is generally used in gas masks?
3. How critical temperature is related to adsorption of a gas?
4. Why a finely divided substance is more effective as an adsorbent?
5. What is Kraft temperature (T_k) and CMC.
6. What is principle of Dialysis?
7. What is the cause of Brownian movement?

(2 marks questions)

8. Define Gold number. How coagulation of gold sol is indicated by change in colour?
9. Differentiate oil-in-water (o/w type) and water-in-oil (w/o type) emulsions.
10. How oil-in-water or water-in-oil type emulsions can be identified. Give one test.
11. 40 ml of standard gold sol. needs 0.04mg of gelatin for its protection from coagulation. Calculate gold number of gelatin.
12. What are emulsions? Give their types.
13. What is Sorption? How it differs from adsorption?
14. Explain the saturation state in adsorption isotherms.

(3 marks questions)

15. (i) What is surface catalysis?
(ii) Explain the term "Activity of a catalyst" and "Selectivity of a catalyst". Give examples also.
16. What is electrophoresis? What is its significance?
17. Explain shape selective catalysis by Zeolites.

3. As we go down the group the bond angle decreases as
 $\text{NH}_3 = 107.8^\circ$, $\text{PH}_3 = 93.6^\circ$ Explain it.
4. Ammonia has higher boiling point than phosphine. Why?
5. Which hydride of group 15 elements has lowest boiling point?
6. Give the names of three allotropes of phosphorus? Which out of these is most reactive?
7. Give one function (or use) of nitrolim ($\text{CaCN}_2 + \text{C}$)

(2 marks questions)

8. Give reactions for the manufacture of nitric acid, by Ostwald's process.
9. Why does ammonia act as a Lewis base?
10. Nitrous acid (HNO_2) acts both as an oxidising agent as well as reducing agent. How?
11. Why all the five bonds in PCl_5 are not equivalent? Explain.
12. Why conc. HNO_3 turns yellow on exposure to sunlight?
13. Why PCl_5 is known but PI_5 is not known?
14. Why pentahalides of Phosphorus are formed but penta-halides of nitrogen are not formed?

(3 marks questions)

15. (i) What are 3 isotopes of oxygen? Out of them which is radioactive?
(ii) What are 'amphoteric oxides' and 'neutral oxides'?
16. Like all other first elements of the groups, why oxygen shows anomalous behaviour?
17. Write the structural formula of :
 H_2SO_4 , $\text{H}_2\text{S}_2\text{O}_8$, H_2SO_3

(More questions)

1. SF_6 is known but SCl_6 is not known. Why?
2. Although fluorine is the most electronegative halogen, even then it is the weakest acid among hydrogen halides. Why?
3. F_2 is better oxidising agent than Cl_2 . Explain.
4. H_2S is a gas and H_2O is a liquid. Why?
5. Why chlorine shows bleaching action?
6. H_3PO_4 is triprotic acid Or H_3PO_3 is diprotic acid. Why?
7. Why does NO_2 dimerise?
8. Why does oxygen not show +4 and +6 oxidation states like sulphur?
9. Give 2 uses of He, Ne, Ar, Kr & Xe, Rn (noble gases)
10. Why noble gases have low boiling points?

Unit – 8 (d- and f-block elements)**(1 mark questions)**

1. Chromium and copper have exceptionally high enthalpy values than those of their neighbours. Why?
2. Most of the transition elements show variable oxidation states. Explain the reason.
3. Compounds containing completely filled d-orbitals or completely empty d-orbitals are generally white. Why?
4. What is crystal field splitting?
5. What is d-d transition?
6. How number of unpaired electrons in a substance are related to magnetic moment of ions (B.M.)
7. What is lanthanoid contraction?

(2 marks questions)

8. Oxygen stabilizes the highest oxidation state of a metal even more than fluorine in case of 3d transition series metals. Explain.
9. Why a green layer is formed on the surface of copper metal, if, kept in moist air. Explain.
10. Why actinoids show large number of oxidation states?
11. Why silver is a transition metal but zinc is not? Explain.
12. Give two differences between lanthanoids and actinoids.
13. Why transition elements generally form coloured compounds?
14. Which out of $\text{Lu}(\text{OH})_3$ and $\text{La}(\text{OH})_3$ is more basic and why?

(3 marks questions)

15. Why KMnO_4 titrations are carried out only in the presence of dil H_2SO_4 .
16. Enthalpy of Zinc is the lowest (126 KJ/mol), in the series (Z=21) to (Z=30). Why?
17. (i) Calculate the spin only magnetic moment of M^{2+} (aq) (Z=27)
(ii) Which is a stronger reducing agent Cr^{2+} or Fe^{2+} and why?

(More questions)

1. Why Cu^+ ion is not stable in aqueous solution?
2. What happens when $\text{K}_2\text{Cr}_2\text{O}_7$ is heated with NaCl and H_2SO_4 ?
3. How the colour of $\text{K}_2\text{Cr}_2\text{O}_7$ solution depends on the P_H of solution. Explain.
4. Give the structure of CrO_4^{2-} and $\text{Cr}_2\text{O}_7^{2-}$ ions.
5. Of the ions Co^{2+} , Sc^{3+} and Zn^{2+} , which one will give coloured aqueous solutions and how will each of them respond to a magnetic field and why?

Unit – 9 (Co-ordination Compounds)

(1 mark questions)

1. What are co-ordination compounds? Give example.
2. What are double salts? Give example.
3. Give one difference between structural and stereo-isomerism.
4. Define the terms 'Co-ordination sphere' and 'co-ordination number'.
5. What are ambidentate ligands? Give example?
6. What are weak-field and strong-field ligands?
7. What are low spin complexes and high-spin complexes?
8. Give IUPAC names of the following co-ordinate compounds :-
 - (i) $K_2[HgI_4]$
 - (ii) $[Cr(NH_3)_3(H_2O)_3]Cl_3$
 - (iii) $Na_2[Fe(CN)_5NO]$
 - (iv) $[Cu(NH_3)_4]SO_4$
 - (v) $[Ni(CO)_4]$
 - (vi) $[Au(CN)_4]^-$
11. Calculate the oxidation no. of central metal atom in $[Fe(C_2O_4)_3]^{3-}$ and $[Ni(NH_3)_6]^{2+}$
12. Why geometrical isomerism is not shown by complexes with co-ordination number 4 having tetrahedral geometry?

(2 marks questions)

13. Predict the number of unpaired electrons in the square planar $[Ni(CN)_4]^{2-}$ ion
14. Why $[Ni(CN)_4]^{2-}$ sol. is colourless but $[Ni(H_2O)_6]^{2+}$ solution is green?
15. Explain with the help of valence bond theory, that $[Ni(CO)_4]$ is diamagnetic and tetrahedral.
16. $[Fe(CN_6)]^{3-}$ is weakly paramagnetic while $Fe(CN)_6^{4-}$ is diamagnetic. Explain.
17. Give biological importance of co-ordination compounds by giving 2 examples.
18. How crystal field theory explains the colours of transition metal complexes?
19. NH_3 readily form complexes but NH_4^+ does not. Why?
20. Draw the geometrical isomers of $[CoCl_2(NH_3)_4]^+$.
21. Explain linkage isomerism by giving one example.

Unit – 10 (Haloalkane and Haloarenes)**(1 mark questions)**

1. Why fluorination of hydrocarbons with F₂ gas occurs explosively?
2. Write the major product of the reaction :



3. Give 2 uses of Freon.
4. Give the name of the reaction, in which only haloarenes are treated with sodium, forming diaryls.
5. Why the boiling points of chlorides, bromides and iodides are considerably higher than those of the hydrocarbons of comparable molecular mass?
6. What is Kharasch effect or peroxide effect?
7. Give 1 test for detection of unsaturation (double or triple bond) in an organic molecule.

(2 marks questions)

8. Explain Finkelstein reaction.
9. Bromoalkanes can be easily prepared by refluxing the silver salts of a fatty acid. Name and explain the reaction.
10. Explain the stability of the haloalkanes having the same alkyl group.
11. In the formation of alkenes, dehydrohalogenation is classified as β-elimination reaction. Explain.
12. According to Saytzeff's rule, show saytzeff's elimination in case of haloalkanes.
13. (i) What is ambident nucleophile.
(ii) Give 'Williamson Synthesis' reaction.
14. Explain the reactivity of alkyl halides towards SN¹ reactions.

(3 marks questions)

15. How haloarenes are prepared from diazonium salts. Explain, by giving names of the reactions.
16. For isomeric alkyl halides, the boiling points decrease with branching. Explain.
17. Give the uses and environmental effects of Freon/DDT/Iodoform.

Unit – 11 (Alcohols, Phenols and Ethers)

(1 mark questions)

1. Solubility of alcohols in water decreases with increase in molecular mass of the alcohol. Why?
2. Why primary alcohols are the strongest acids and tertiary the weakest?
3. What is coupling reaction?
4. Give 2 uses of ethanol/methanol.
5. Why boiling points of ethers are much lower than those of the isomeric alcohols?
6. How will you distinguish between 1-phenylethanol and 2-phenylethanol. Give reaction for the test.
7. Write the chemical equation for the preparation of Ethoxybenzene.

(2 marks questions)

8. Why do phenols not give protonation reactions readily?
9. What is 'rectified spirit' and 'absolute alcohol'.
10. (i) Name one reagent which is used for the distinction of primary, secondary and tertiary alcohols.
(ii) How will you know whether a given OH group is alcoholic or phenolic in nature!
11. How will you synthesise salicylic acid from phenol?
12. Why are Grignard reagents soluble in ether but not in benzene?
13. Describe the 'Kolbe's reaction'.
14. Discuss the electrophilic substitution reactions in aromatic ethers.

(3 marks questions)

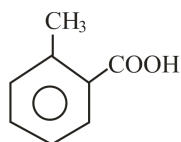
15. Why alcohols act both as nucleophiles as well as electrophiles while phenols usually act as nucleophiles only? Show the reaction for both.
16. Phenols are stronger acid than alcohols. Explain.
17. (i) Sodium metal can be used for drying diethyl ether, but not for an alcohol.
(ii) How will you convert chlorobenzene to picric acid.

Unit – 12 (Aldehydes, Ketones and Carboxylic acids)

(1 mark questions)

1. Carbonyl compounds mainly show nucleophilic addition reactions. Why?
2. Why it is necessary to control the pH during the reaction of aldehydes and ketones with ammonia derivatives?
3. Formic acid is stronger acid than acetic acid. Why?

4. The bond length of $>C=O$ in carboxylic acid is slightly larger than that in aldehydes and ketones. Why?
5. Why p-nitrobenzoic acid is stronger than benzoic acid?
6. How will you convert an acid into an ester without using an alcohol.
7. Out of p-chlorobenzoic acid and p-nitrobenzoic acid which is stronger and why?
8. Why are aldehydes more reactive than Ketones?
9. Give the IUPAC name of the following compound.



10. Give a suitable example of Hell-Volhard Zelinsky reaction.
 11. How can you distinguish an alcohol and a carboxylic acid.
 12. How would you obtain Acetone from acetic acid.
- (2 marks questions)**
13. Show reduction of aldehyde/ketone by 'clemmensen reduction'.
 14. How will you convert acetophenone to benzoic acid.
 15. Benzaldehyde is less reactive than acetaldehyde towards nucleophilic addition reactions. Explain.
 16. Formaldehyde gives cannizzaro reaction whereas acetaldehyde does not. Explain.
 17. Why acetaldehyde gives aldol condensation, while formaldehyde does not. Explain.
 18. Give a chemical test to distinguish between
 - (i) acetophenone and benzophenone
 - (ii) Ethanal and propanal
 19. Give one colour test to distinguish an aldehyde and a ketone.
 20. How is benzoic acid prepared from :-
 - (i) Toluene
 - (ii) Benzaldehyde
 21. Why aromatic acids are solids but acids of acetic acid group are mostly liquids?

Class - XII

Unit – 13 (Organic Compounds Containing Nitrogen)

(1 mark questions)

1. Why amines have lower boiling points than those of alcohols or carboxylic acids?
2. Why alkylamines are more basic than ammonia?
3. Which test can be used to distinguish between primary amines from secondary and tertiary amines? Name the reaction also.
4. What is 'diazotisation'?

5. Why tertiary amines do not undergo acylation?
6. Why do amines react as nucleophiles?
7. Give a chemical test to distinguish between aniline and N-methylaniline.
8. Aromatic primary amines cannot be prepared by Gabriel phthalimide synthesis. Why?
9. How will you convert Benzene into aniline?
10. Account for the following :
 - (i) pK_b of aniline is more than that of methylamine.
Or
 - (ii) Diazonium salts of aliphatic amines are less stable than those of aromatic amines.
Or
 - (iii) Aliphatic amines are more basic than arylamines.
11. Why tertiary amines are more basic than primary amines?
12. Lower aliphatic amines are soluble in water but higher amines are insoluble in water. Why?

(2 marks questions)

13. N-methylaniline is a stronger base than aniline and N, N- dimethyl aniline is even stronger than N-methylaniline. Explain.
14. Explain exhaustive alkylation.
15. Explain Hoffmann's elimination reaction.
16. Explain Schotten Baumann reaction.
17. Explain Libermann's nitroso reaction.
18. Give 1 test to distinguish ethylamine and aniline.
19. How will you convert Benzamine to benzoic acid.
20. How will you convert nitrobenzene into phenol.
21. Aniline does not undergo Friedel crafts alkylation. Explain.

(More questions)

1. Give one chemical test to distinguish between methylamine and dimethylamine.
2. In aromatic electrophilic substitution reactions, aniline on nitration gives a substantial amount of m-nitroaniline, although amino group is o- and p- directing.
3. Explain the Hoffmann mustard oil reaction.
4. Compare the basic strength of aniline and ethylamine.

Unit – 14 (Biomolecules)

(1 mark questions)

1. What is mutarotation?
2. Why sucrose is much useful for preserving foods such as Jams and Jellies, but glucose is not useful?
3. What are non-reducing sugars?
4. Why dentists caution you not to eat candy?
5. Explain the term 'Zwitter ion'.
6. What is isoelectric point?
7. What is Ninhydrin test?
8. Define the term ' α -helix'.
9. What is hypervitaminoses?
10. Give the chemical name of vitamin A/B₁/B₂/C
11. Explain the disease 'phenyl-ketone urea', which is a enzyme deficiency disease.
12. Name the vitamin, which helps in healing of cuts and wounds.

(2 marks questions)

13. What are the hydrolysis products of sucrose and lactose?
14. Give 4 structural differences between DNA and RNA.
15. Explain 'DNA fingerprinting'.
16. Give the relation of nucleosides, nucleotides and nucleic acids.
17. What are the deficiency diseases of vitamins :
A, B₁, C, D, E, K
18. Name the enzymes which convert :-
 - (i) Sucrose to Glucose and fructose
 - (ii) Maltose to Glucose
 - (iii) Starch to Glucose
 - (iv) Glucose to Alcohol
19. Why Vitamin C cannot be stored in our body?
20. The two strands in DNA are not identical but are complimentary. Explain.
21. Name the four bases present in DNA. Which one of these is not present in RNA?

Unit – 15 (Polymers)

(1 mark questions)

1. What is the difference between natural and synthetic polymers? Give 2 examples of each.
2. What are biopolymers?
3. Explain vulcanization.
4. What is the basic difference between thermosetting polymers and thermoplastic polymers?
5. What are cross linked polymers? Give one example.
6. What is the difference between nylon-6 and nylon-66.
7. How can you differentiate addition and condensation polymerisation?
8. All polymers are macromolecules but all macro-molecules are not polymers. Comment upon it.
9. How natural rubber is prepared from Isoprene?
10. Differentiate LDP and HDP
11. Give 2 uses of LDP and HDP each.

(2 marks questions)

12. How Buna-S is obtained.
13. What are biodegradable polymers?
14. Distinguish between homopolymer and copolymer.
15. Write chemical equation for the preparation of polyvinyl chloride.
16. What is the difference between copolymer and homopolymer?
17. How is bakelite made and what is its major use.
18. How polyacrylonitrile (PAN) is prepared?
19. How Buna-N is obtained?
20. What are the monomer units, for preparing PHBV.
21. How nylon-2-nylon-6 is obtained.

Unit – 16 (Chemistry in everyday life)

(1 mark questions)

1. What is chemotherapy?
2. Name a substance which can be used as an antiseptic as well as disinfectant.
3. What are food preservatives?
4. Name 2 sweetening agents used in the preparation of sweets for a diabetic patient.
5. How are synthetic detergents better than soaps.
6. Why do we require artificial sweetening agents?

7. What are the main constituents of dettol?
8. What is the role of Bithional in toilet soaps?
9. What are antipyretics? Give example.
10. What is the role of an antacid?
11. Define 'tranquillizer'.
12. What are 'antihistamines'?

(2 marks questions)

13. How Aspirin drug helps in prevention of heart attack.
14. Briefly discuss the cleansing action of detergents.
15. Without consulting the doctors, why medicines should not be taken?
16. Define 'analgesics'. Briefly discuss the 2 categories of analgesics.
17. What is tincture of iodine? What is its use?
18. How do antiseptics differ from disinfectants.
19. Define the following with one example in each case.
(i) Antimalarials (ii) Antimicrobials
20. Mention one use of following drugs :
(i) Ranitidine (ii) Aspirin (iii) Valium (iv) Chloramphenicol.
21. What are neutral detergents? Give example.

Class - XII

Solid State

Marks division	2 Marks	3 Marks	Total : 5 marks
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Two Marks Questions

1. What are Crystalline solids? Explain with suitable examples.
2. Why Crystalline solids are called long range order solids?
3. Give properties of Crystalline solids.
4. What are Amorphous solids? Explain with suitable examples.
5. Why amorphous solids are called short range order solids?
6. What are crystallites? Explain.
7. What are anisotropic and isotropic solids? Give examples.
8. What are molecular solids?
9. Give characteristics of solids.
10. Why are solids rigid and have specific shape?
11. Why do solids have a definite volume?
12. Why is glass considered as a super cooled liquid?
13. Refractive index of a solid is observed to have the same value along all directions. Comment on the nature of this solid.

14. Stability of a crystal is reflected in the magnitude of its melting point comment.
15. Distinguish between tetrahedral and octahedral void.
16. (i) Why Frenkel defect does not change the density of AgCl Crystal.
(ii) Differentiate substitutional and interstitial solids.
17. Distinguish between hexagonal close packing and cubic close packing.
18. Write the difference between amorphous and Crystalline solids.
19. Distinguish between crystal lattice and Unit cell.
20. Distinguish between hexagonal close packing and cubic close packing.
21. Will hcp and ccp for a given element have same density?
22. What is radius ratio and what is its significance?
23. According to band theory explain with diagram difference between a conductor and an insulator and a semi conductor.
24. Which have more entropy, real crystal or ideal crystal and why?
25. Why does zinc oxide exhibit enhanced electrical conductivity on heating?
26. Account for the following (i) Frenkel defects are not found in alkali metal halides (ii) Schottky defects lower the density of related Solids. (ii) Impurity doped Silicon is a semiconductor.
27. Difference between Frenkel and Schottky defects.
28. Define Ferromagnetism, paramagnetism, ferrimagnetism, antiferromagnetism, F-centres, diamagnetism.
29. How will you calculate the no. of atoms in a Unit cell. Discuss by taking different examples.
30. What do you know about Stoichiometric defects, non-stoichiometric defects and impurity defects?
31. Conductivity of NaCl is enhanced by the introduction of SrCl₂ as the impurity. Why?
32. Covalent bonding occur in both molecular and covalent network solids but these two types of solids differ greatly in their hardness and m.pt. Why.
33. Discuss the classification of Crystalline Solids with example and also discuss their properties.
34. Give properties of Crystalline solids and amorphous solids.
35. What is the effect of temp. on electrical conductivity of conductors and semi-conductors.
36. Define and explain *n*-type and *p*-type semiconductors.
37. What are 12-16 and 13-15 compds? Explain.

p-Block Elements**One mark questions.**

1. NH_3 acts as a lewis base how?
2. NH_3 is liquid where as PH_3 is a gas why?
3. Nitrogen exists as ' N_2 ' where as phosphorous exists as P_4 why?
4. How ammonia acts as a solvent?
5. Give structures of N_2O_5 and N_2O_3 .
6. Why white phosphorous is stored under water?
7. Why O_3 acts as a mild bleaching agent?

Two marks questions.

8. PCl_5 is known but NCl_5 is not known. Why.
9. NH_3 acts as a complexing agent how? Give suitable example.
10. Ionization enthalpy of nitrogen is more than oxygen. Why?
11. Give chemical reaction in support of the Statement that all the bonds in PCl_5 molecule are not equivalent.
12. Nitric oxide (NO) is paramagnetic in the gaseous state but diamagnetic in the liquid and solid states. Why?
13. Give structure of H_3PO_3 and H_3PO_4 and its basicity.
14. Bi^{+5} is a strong oxidising agent why?
15. Explain why 'N' and 'Bi' do not form pentahalides while phosphorous does?
16. The electron gain enthalpy with negative sign for oxygen (-141 KJ mol^{-1}) is less than that of Sulphur (-200 KJ mol^{-1}) Why?
17. (i) SF_6 is known but SH_6 is not known. Why?
(ii) OF_2 should be called oxygen difluoride and not fluorine oxide. Why?
18. (i) SF_4 undergoes hydrolysis but SF_6 does not. Why?
(ii) Among halogens ' F_2 ' is the strongest oxidising agent why?
19. Bond energy of ' F_2 ' is less than ' Cl_2 '. Why?
20. Interhalogen compounds are more reactive. Why?
21. Halogens show some specific colours. Why?
22. Bleaching action of chlorine is permanent but that of Sulphur trioxide is temporary. Why?
23. 'F' is more electronegative than 'I', even then HF has lower acidic strength as compare to HI. Why?
24. Which is more acidic and why?
 HClO , HIO , HBrO
25. HClO_4 is a stronger acid than H_2SO_4 . Why?
26. Xenon does not form fluorides such as XeF_3 and XeF_5 . Why?
27. Why do noble gases form compounds with fluorine and oxygen only?

28. What prompted Barlett to the discovery of noble gas compounds?
29. ClF_3 exist but FCl_3 does not. Why?
30. Why xenon forms maximum no. of compounds where as 'He' and 'Ne' not?
31. Noble gases are inert. Why?
32. Fluorine exhibits only - 1 oxidation state whereas other halogens exhibit +1, +3, +5 and +7 oxidation states. Explain.
33. Halogens have maximum negative electron gain enthalpy why?
34. Why are peptalialides more covalent than trihalides?
35. How O_3 reacts with I_2 , KI , ZnS , Sb , S_8 and P_4 ?
36. How does SO_2 reacts with Cl_2 , KMnO_4 , KIO_3 , SnCl_2 ?
37. How is Sulphuric acid manufactured.
38. How is HNO_3 manufactured.
39. How does H_2SO_4 reacts with 'C', $\text{C}_{12}\text{H}_{22}\text{O}_{11}$, $\text{CH}_3\text{CH}_2\text{OH}$.
40. How Cl_2 reacts with $\text{Ca}(\text{OH})_2$ and NaOH .

Class - XII

d- and F-block Elements

Total – 30 marks

One mark questions.

1. Why Zn^{2+} Salts are coloured where as Ni^{2+} Salts are colourless.
2. $\text{Mn}(\text{II})$ show maximum paramagnetic behaviour amongst the bivalent ions of the I transition series?
3. The melting and boiling points of Zn , Cd and Hg are low. Why?
4. Which out of $\text{La}(\text{OH})_3$ and $\text{Lu}(\text{OH})_3$ is more basic and why?
5. Chromium is a typical hard metal where as mercury is a liquid. Why?
6. Why Sm^{2+} , Eu^{2+} and Yb^{2+} ions in solutions are good reducing agents but an aqueous solution of Ce^{4+} is a good oxidising agent?
7. The +3 oxidation states of 'La', 'Gd', 'Lu' are especially stable. Why?

Two marks questions

8. (i) Give structure of Mn_2O_7
(ii) First ionization enthalpy of 'Zn', 'Cd' and 'Hg' is very high. Why?
9. (i) Atomic radii of the second and third transition series are almost the same why?
(ii) What are interstitial compounds? Give example.
10. Why transition metals and their compounds are used as catalysts?
11. (i) Why 'Zn', 'Cd', and 'Hg' are not considered as transition elements?
(ii) Give structure of $\text{Cr}_2\text{O}_7^{2-}$ and CrO_4^{2-} ions.

12. How is potassium dichromate prepared?
13. How does $K_2Cr_2O_7$ reacts with KI, $FeSO_4$, SO_2 , $NaNO_2$?
14. How is $KMnO_4$ manufactured?

Three mark questions

15. How does $KMnO_4$ reacts with $CH_2=CH_2$, H_2S , KNO_2 , H_2O_2 , CH_3CH_2OH ?
16. What is lanthanoid contraction? What is its reason and what are its consequences?
17. Differentiate Lanthanoids and Actinoids.
18. Why is the separation of Lanthanoids more difficult?
19. Chemistry of all the Lanthanoids are quite similar. Why?
20. Write the chemistry of chromyl chloride test.
21. Why is Eu^{2+} more stable than Ce^{2+} ?
22. Why Lanthanoids are uniformly trivalent?
23. Explain that transition elements form alloys.
24. Why do transition elements form a number of complexes?
25. Why do transition elements form, coloured compounds?
26. Which is a stronger reducing agent Cr^{2+} and Fe^{2+} and Why?
27. Why are transition metals weaker reducing agents as compared to S-block elements?
28. Why do Zr and Hf exhibit similar properties?
29. What is the action of heat on $KMnO_4$?

Co-ordination Compounds

Total – 30 marks

- Write IUPAC names of the following compounds.

(i) $K_3[CO(NO_3)_6]$	(ii) $[CoCl(NO_2)(NH_3)_4]Cl$	
(iii) $[Pt(NH_3)_2Cl_2]$	(iv) $K_2[Cu(CN)_4]$	2 marks
- Write down the formulae of the following co-ordination compounds.

(i) hexaaqua iron (II) sulphate	
(ii) potassium hexacyano ferrate (III)	2 marks
- How will you distinguish between the following isomer pairs?

(i) $[Co(NH_3)_5Br]SO_4$	(ii) $[Co(NH_3)_5SO_4]Br$
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- $[Ti(H_2O)]^{3+}$ is coloured while $[Fe(H_2O)_6]^{3+}$ is colourless why?
- $[Fe(CN)_6]^{4-}$ is diamagnetic where as $[Fe(CN)_6]^{3-}$ is weakly paramagnetic. Why.

Two Marks questions

- $[Ni(CO)_4]$ has tetrahedral geometry where as $[Ni(CN)_4]^{2-}$ has square planer. Why?
- $[FeF_6]^{3-}$ and $[Fe(CN)_6]^{3-}$ have different magnetic properties. Explain why?
- $K_4[Fe(CN)_6]$ and $K_3[Fe(CN)_6]$, which out of these two is more stable and why?
- Illustrate linkage and ionisation isomerism with example.
- What is co-ordination isomerism? Explain with example.
- Explain the differences between weak field and strong field ligand?
- What are inner and outer orbital complexes?
- What are 't_{2g}' and 'e_g' orbitals explain?
- Discuss hydrate isomerism with example.

Three Marks questions

- How are ligands classified as unidentate, tridentate and polydentate ligands? Give proper examples.
- How is $[Cu(CN)_4]^{2-}$ formed? Discuss its structure, hybridisation and magnetic behaviour.
- Write a short note on optical isomerism in co-ordination compounds.

Halo alkanes and Haloarenes

Q.No. 1-7 = 1 Mark; 8-14 = 2 Marks; 15-17=3 Marks Total – 30 marks

- Why the boiling point of an alkyl halide is higher than that of corresponding alkane?

2. Explain why thionyl chloride is preferred for preparing alkyl chlorides from alcohols.
3. Ethyl chloride is a gas, whereas ethyl iodide is a liquid at room temp. Explain.
4. Why is chloroform stored in dark brown bottles?
5. Which compound gives iodoform test.
6. Give example of Wurtz-fitting reaction.
7. Write the structural formula and IUPAC name of BHC.
8. How will you obtain haloalkanes from hydrocarbons by free radical halogenation?
9. How will you prepare haloalkanes from alcohols? Give mechanism.
10. Give Hunsdiecker reaction and Swarts reaction.
11. How will you explain the relative reactivity of haloalkanes?
12. Explain why alkylhalides show nucleophilic substitution reactions?
13. How will you prepare haloarenes from aromatic hydrocarbons? Give two examples.
14. The boiling points of isomeric dihalobenzene are nearly the same but their melting points are quite different. Why?
15. How will you explain the low reactivity of haloarenes as compared to halo alkanes?
16. Account for the following.
 - (i) Vinyl chloride is less reactive than ethyl chloride.
 - (ii) Benzyl chloride is more reactive than chlorobenzene towards nucleophilic substitution reaction.
17.
 - (i) Discuss the stereo chemistry of SN^2 reaction.
 - (ii) Discuss the stereo chemistry of SN^1 reaction.

Class - XII

Halo alkanes and Haloarenes

More questions :

1. Treatment of alkyl halides with alc. $AgNO_2$ give mainly nitroalkanes while that with aq. $NaNO_2$ give mainly alkyl nitrites explain. Why?
2. Alkyl halides with aq. KOH give alcohols but with alc. KOH give alkenes why?
3. Why alkyl halides are immiscible in water although they are polar.
4. Why the dipole moment of chlorobenzene is lower than that of cyclohexyl chloride?
5. Why aryl halides are less reactive than alkyl halides?
6. Acidic strength of phenols is more than alcohols why?
7. What are ambident nucleophiles? Explain with example.
8. Out of HCl and $SOCl_2$ which is preferred for converting ethanol into chloroethane and why?
9. Why is dehydrohalogenation reaction in haloalkanes termed as β -elimination?
10. How do products differ when ethyl bromide reacts separately with KCN and AgCN?
11. Why does electrophilic substitution take place at Ortho and Para position in haloarenes?

Alcohols, Phenols and Ethers

Q.No. 1-7=1 Mark; 8-14= 2 Marks; 15-17=3 Marks Total = 30 Marks

1. Why can't rectified spirit be converted into absolute alcohol by simple distillation?
2. Give two important uses of methanol.
3. Why are ethers insoluble in water?
4. How will you obtain alcohols from haloalkanes?
5. C_2H_5OH has higher boiling point than C_2H_5Br . Why?
6. How will you distinguish between ethanol and methanol?
7. How is methanol manufactured?
8. How will you distinguish between 1° , 2° & 3° alcohols by time test?
9. What is meant by hydroboration – oxidation reaction? Give example.
10. What is Fries rearrangement reaction?
11. Boiling point of O-nitrophenol is less than that of p-nitrophenol. Explain.
12. Phenols are more acidic than alcohols. Explain.
13. Give two reactions showing acidic nature of phenol.
14. Alcohols are easily protonated as compare to phenols. How?
15. (i) Dipole moment of methanol is higher than that of phenol. Why?
(ii) O-nitrophenol is more acidic than m-nitrophenol. Why?
16. (i) Diethyl ether is less soluble in water. Why?
(ii) Ethers are used as solvent in industry. Why?
17. Preparation of ethers by acid-catalysed dehydration of secondary and tertiary alcohols is not suitable method. Give reason.

More questions :

1. How will you distinguish between 1° , 2° and 3° alcohol by time test and victor Meyers method?
2. Why alcohols are weaker acids than water?
3. Out of halogen acids HI is more reactive with alcohols than HBr and HCl justify.
4. Out of phenol and benzene, which is more easily nitrated and why.
5. Arrange following compd. in increasing order of their acid strength and explain. Why it is so.
Propan-1-ol, 2,4,6- trinitrophenol, nitrophenol, 3,5- dinitro phenol, phenol, 4-methyl phenol.
6. Explain why dehydration of alcohols to form alkenes is always carried out with conc. H_2SO_4 and not with conc. HCl.
7. Account for the fact that unlike phenol, 2,4- dinitrophenol and 2,4,6- tri-nitrophenol are soluble in aq. sodium carbonate Sol.?
8. Why di-tert. butyl ether cannot be prepared by Williamson's Synthesis.

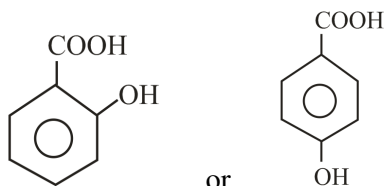
9. HI is a better reagent than HBr for cleavage of ethers.
10. Ethers possess a dipole moment even if the alkyl groups in the molecule are identical. Why?
11. Why a non symmetrical ether is not prepared by heating mixture of R-OH and R¹-OH in acid?
12. While separating mixture of Ortho and para nitrophenols by steam distillation, name the isomer which is more volatile.
13. Why Ortho nitrophenol is more acidic than ortho-methyl phenol?
14. Why phenol has smaller dipole moment than methanol?
15. Why alcohols are easily protonated as compare to Phenols?
16. Why is that tert. alcohol show greater reactivity towards hydrogen halide than Sec. and prim. alcohol.
17. Explain how -OH gr. in benzene ring activates it towards electrophilic substitution reaction.
18. Compare the acidic strength of Prim., Sec. and tert alcohols.
19. How does the nitration of Phenol with dil HNO₃ differ from nitration of Phenol with conc. HNO₃ in the presence of H₂SO₄.
20. Explain why Ethyl alcohol and dimethyl ether are isomeric but the b. pt. of ethyl alcohol is higher?
21. C-O-C bond angle in ethers is higher than H-O-H in H₂O though 'O' is sp³ hybridised in both the case.
22. Phenyl methyl ethers react with HI to give phenol and methyl Iodide and not Iodobenzene and methyl alcohol. Why?

Class - XII

Aldehydes and Ketones

1. Carbonyl compds mainly show nucleophilic addition reactions. Why?
2. Draw structure of Carbonyl group and indicate the 'σ' and π bond and the electrophilic and nucleophilic centres.
3. Sodium bi sulphite is used for the purification of aldehydes and ketones. Explain.
4. Why do aldehydes and ketones undergo nucleophilic addition reaction?
5. Why is it necessary to control pH during the reactions of aldehydes and ketones with ammonia derivatives?
6. Why do aldehydes and ketones have high dipole moments?
7. Why benzaldehyde is less reactive than aliphatic aldehyde ?
8. Why pK_a of ethanoic acid is higher than pK_a of methanoic acid?
9. Why Carboxylic acids do not give tests of carbonyl or hydroxyl group?
10. Why does HCOOH does not give HVZ reaction, but CH₃COOH gives.
11. Chloroacetic acid is Stronger than acetic acid and why?
12. Formic acid is stronger acid than acetic acid why?

13. In the preparation of an ester by the reaction of carboxylic acid and alcohol, ester is distilled as fast as it is formed. Why?
14. Which one is stronger acid and why?



15. Fluoroacetic acid is stronger acid than chloroacetic acid why?
16. Trichloro acetic acid is stronger acid than dichloro acetic acid than acetic acid why?
17. The bond length of $>C=O$ in carboxylic acid is slightly larger than that in aldehydes and ketones why?
18. Why p-nitrobenzoic acid is stronger acid than benzoic acid?
19. The b.pts of acid anhydrides are higher than that of corresponding carboxylic acids from which they are formed & why?
20. Why p-Nitrobenzoic acid is stronger than benzoic acid?
21. Benzoic acid is stronger acid than acid and why?
22. How will you convert an acid into an ester without using an alcohol?
23. Out of methanoic acid and ethanoic acid, which has higher pK_a value and why?
24. Acid hydrolysis of esters is of reversible nature, while alkaline hydrolysis is irreversible? Why.
25. Fluorine is more electro negative than chlorine, but p-fluoro benzoic acid is a weaker acid than p-chlorobenzoic acid.
26. Although phenoxide ion has more no. of resonating structures than carboxylate ion, carboxylic acid is stronger acid than phenol. Why?
27. Acetic acid can be halogenated in the presence of red P and Cl_2 but formic acid cannot be halogenated in the same way. Explain?
28. Out of p-chloro benzoic acid and p-nitrobenzoic acid which is stronger and why?
29. Most aromatic acids are solids while acetic acid and other acids of this series are liquids why?
30. Discuss structure of Carboxylic acids. How do you account for acidic character of Carboxylic acids?
31. Formaldehyde gives cannizzaro's reaction whereas acetaldehyde does not. Why.
32. p-hydroxy benzoic acid is less acidic than benzoic acid where as ortho hydroxy benzoic acid is about 15 times more acidic than benzoic acid. Why?
33. Hydrazones of acetaldehyde are not prepared in highly acidic medium. Why?
34. Why aldehydes are more reactive than ketones?

Nitrogenous Comps

1. Electrophilic substitution in case of aromatic amines takes place more readily than benzene. Why?
2. Why is aryl diazonium ion is more stable than alkyl diazonium ion?
3. It is difficult to prepare pure amine by ammonolysis of alkyl halides.
4. Why is aniline less basic than ethylamine?
5. Although amino group is O- and p-directing in aromatic electrophilic substitution reactions, aniline on nitration gives a substantial amount of m-nitroaniline.
6. How is indicator methyl orange obtained?
7. Sulphanilic acid is soluble in dil. NaOH but not in dil HCl. Explain.
8. p-methoxy aniline is a Stronger base than aniline but p-nitroaniline is a weaker base than aniline. Explain.
9. CH_3CONH_2 is a weaker base than $\text{CH}_3\text{CH}_2\text{NH}_2$ why.
10. Aniline does not undergo Friedel - Crafts reaction why?
11. Arrange the following in increasing order of their basic strength and give reason.

CH_3NH_2 ,	$(\text{CH}_3)_2\text{NH}$	and	$(\text{CH}_3)_3\text{N}$
$\text{C}_2\text{H}_5\text{NH}_2$,	$(\text{C}_2\text{H}_5)_2\text{NH}$	and	$(\text{C}_2\text{H}_5)_3\text{N}$
12. Why aromatic primary amines cannot be prepared by Gabriel phthalimide Synthesis?
13. Why does CuSO_4 solution gives deep blue colour with MeNH_2 ?
14. Why are amides partially neutral in nature?
15. Explain the observed pK_b order of Me_2NH , Me NH_2 and Me_3N .
16. How do cyanides and isocyanides differ in their structure?
17. Which is more basic aliphatic amines or ammonia and why?
18. Amides are weaker bases than amines why.
19. Why primary amines have higher boiling point than tertiary amines?
20. Why are aromatic amines weaker bases than aliphatic amines?
21. Differentiate between alkyl cyanides and isocyanides.
22. Why is nucleophilic substitution of p-nitrochloro benzene easier than that of chlorobenzene?
23. Why aniline is a weaker base than cyclohexyl amine. Explain.
24. Aniline has a higher b. pt. than chlorobenzene. Why?
25. Why is aniline soluble in dil. HCl while nitrobenzene is insoluble in dil. HCl?
26. Is it possible to prepare aniline by Gabriel Phthalimide Syn?
27. Ethylamine is soluble in water where as aniline is insoluble. Why?
28. In trimethyl amine, the bond angle is 108° . Explain.

Bio molecules

Q.No. 1-7=1 Mark; 8-14= 2 Marks; 15-17=3 Marks Total = 30 Marks

1. What is biochemistry?
2. What are biochemicals?
3. What are disaccharides? Give one example.
4. What is meant by inversion of Sugar?
5. What is invert sugar?
6. What products are obtained when lactose is hydrolysed?
7. What is muta-rotation?
8. Draw the structure of cellulose.
9. Glucose is soluble in water but cyclohexane or benzene is not soluble in water. Why?
10. How is glucose prepared?
11. How does glucose react with tollen's reagent?
12. Discuss the evidence leading to cyclic structure of D(+) glucose.
13. Explain the main differences between α -glucose and β -glucose.
14. Discuss structure of fructose.
15. (i) What are amino acids? Describe Zwitter ion structure.
(ii) Explain isoelectric point of amino acids.
16. What is peptide linkage? Give differences between polypeptide and protein.
17. Explain the tertiary structure of proteins. What type of bonding is responsible for their structures?

More questions.

18. What is the effect of denaturation on the Structure of proteins?
19. What do you mean by denaturation of proteins?
20. What are enzymes and co-enzymes? Mention various steps involved in an enzyme catalysed reaction.
21. Differentiate between primary and secondary structure of proteins.
22. Differentiate between nucleoside and nucleotide.
23. What are nucleic acids? Name the types of bases present in these nucleic acids.
24. Differentiate between ribose and de-oxyribose.
25. Two strands of DNA are not identical but are complementary comment.
26. Explain the term mutation in DNA.
27. Give differences between RNA and DNA.
28. Describe briefly transcription and translation.
29. What is genetic engineering? What are its aims?
30. What is meant by mutation? What are the consequences of mutation?

Bio molecules**More questions.**

1. Write the structure of adenosine triphosphate indicating clearly the energy rich bonds. How does this molecule form the source of energy?
2. What is a peptide bond? Give an example.
3. Give differences between polypeptide and proteins; fibrous and globular proteins.
4. Give difference between nucleotide and nucleoside.
5. State importance of biotechnology in daily life.
6. Give difference between enzymes and chemical catalysts.
7. What are reducing and non-reducing sugars?
8. What changes occur during digestion of a protein in humans?
9. Give functions of various types of RNA found in the cell.
10. Give difference between enzyme and co-enzyme; α -helix and β -pleated structure.
11. Give difference between primary and secondary St. of Protein.
12. Enumerate structural difference between DNA and RNA.
13. Explain muta rotation with the help of D-glucose.
14. How does DNA replicate? Describe the mechanism of replication. How is the replication responsible for preservation of heredity?
15. Comment on specificity of enzyme action. Give reason for specificity.
16. Amino acids are amphoteric in nature. Why?
17. On electrolysis in acidic sol. amino acids migrate towards cathode while in alkaline sol. these migrate towards anode. Why?
18. Write down the structures and names of the products when D-glucose is treated with acetic anhydride, hydrocyanic acid, bromine, conc. HNO_3 and HI.
19. Enumerate the rxns of glucose which cannot be explained by open chain st.
20. Amylose and cellulose are both straight chain Polysaccharides containing only D-glucose units. What is structural difference between two?
21. Which forces are responsible for the stability of α -helix? Why is it named as 3.6₁₃ helix?
22. What are complementary bases? Show H-bonding between adenine, thymine, guanine and cytosine.

Polymers

Q.No. 1-7=1 Mark; 8-14= 2 Marks; 15-17=3 Marks Total = 30 Marks

1. What are homopolymers? Give one example.
2. What are copolymers? Give example.
3. Write the preparation of polypropylene.
4. Write two uses of teflon.
5. Explain the differences between Buna-N and Buna-S rubber.
6. What are the monomer units of bakelite?
7. What is vulcanisation? Why is rubber vulcanised?
8. Explain addition and condensation polymers giving one example in each case.
9. Explain the linear and cross linked polymers with example.
10. How are low density polythylene and high density polythylene manufactured?
11. Explain how do 1,3-butadiene polymerise?
12. How is teflon Synthesized?
13. Write equation for the Synthesis of polymethyl methacrylate.
14. What is the difference between nylon-6 and nylon 66?
15. How nylon 66 is synthesized? Why is it called nylon 66?
16. What is natural rubber? How is it synthesized?
17. (i) How acetylene is converted into neoprene?
(iii) How are terylene and glyptal prepared?

Chemistry in Everyday life

Q.No. 1-7=1 Mark; 8-14= 2 Marks; 15-17=3 Marks Total = 30 Marks

1. What is meant by chemo therapy?
2. Which forces are involved in holding the drugs to the active site of enzymes?
3. What is meant by active site and allosteric site?
4. What are antagonists and agonists?
5. What are tranquillizers? Give example.
6. Why the medicines should not be taken without consulting the doctors?
7. Why paracetamol is preferred to aspirin?
8. What is heroin? What is its chemical name?
9. What are artificial sweetening agents? Give examples.
10. What are food preservatives?

11. (i) Why is bithionol added to soap?
(ii) Why detergents are called Soapless soaps?
12. (i) Why is the use of aspartame limited to cold foods and drinks only?
(ii) What is BHA and BHT?
13. What do you understand by Antacids?
14. Why are cimetidine and ranitidine better antacids than Sodium bicarbonate or magnesium hydroxide?
15. How do antiseptics and disinfectants differ?
16. What are antibiotics? Explain.
17. Discuss the varieties of Soaps.