

Important Short Questions FBISE papers

Answer the short questions. The answer of each part should not exceed 3 to 4 lines.

Q1. Define equilibrium state. How a dynamic equilibrium is established in a reversible chemical reaction.

Ans: Equilibrium state:

A State of a chemical reaction in which forward and reverse reactions take place at the same time is called chemical equilibrium.

Dynamic equilibrium:

Chemical equilibrium is a dynamic equilibrium. This is because reactions do not stop when they come to equilibrium state. The individual molecules keep on reacting continuously. But there is no change in the actual amounts of reactants and products. This means concentrations for reactants and products become constant at equilibrium stage.

Q2. What is key reaction of neutralization? It is an exothermic reaction. Explain with suitable reason.

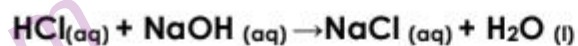
Ans: Neutralization:

Reaction between an acid and a base is called neutralization reaction.

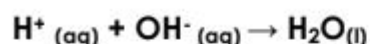
Explanation:

Neutralization reaction is exothermic because heat is evolved during this reaction.

Acid + Base $\rightarrow$ salt + water



Neutralization is the reaction between H^+ ions of an acid and OH^- ions of a base.



Reactions of acids with bases are used in the experimental procedure of titration.

Q3. Differentiate between saturated and unsaturated hydrocarbons.

Ans: Saturated hydrocarbons:

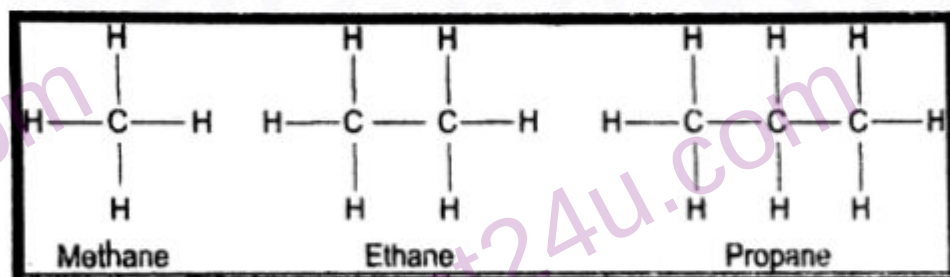
Hydrocarbons whose carbon – carbon bonds are all single bonds are called saturated. Saturated hydrocarbons are also called the alkanes.

In alkanes each carbon atom is bonded to four other atoms. Methane is the simplest alkane.

General formula of alkanes:

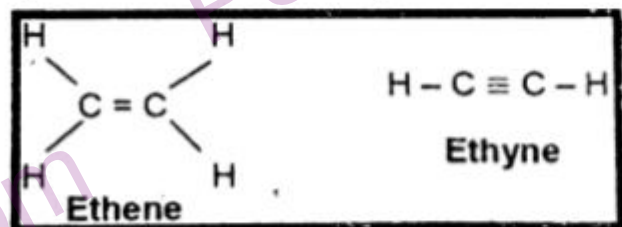
The general formula of alkanes is $\text{C}_n\text{H}_{2n+2}$, where n is the number of carbon atoms.

Three saturated hydrocarbons:

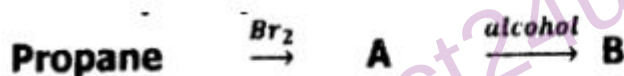


Unsaturated hydrocarbons:

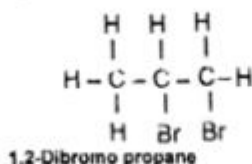
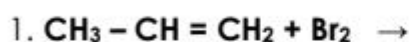
Hydrocarbons containing carbon-carbon multiple bonds are called unsaturated.



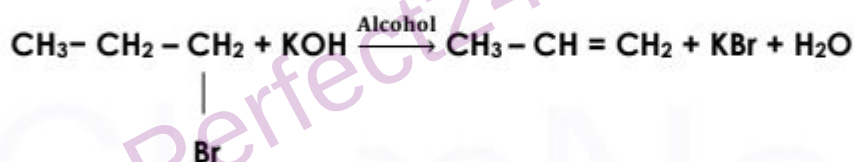
Q4. Identify the products A and B in following reactions:



Solution:



Name of product (A) is 1,2 – Dibromo propane

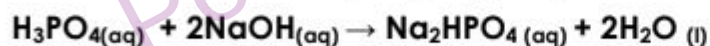


Name of product (B) is 1,2 –propene
KOH

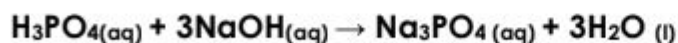
Q5. Phosphoric acid is a tribasic acid. When reacted with sodium hydroxide solution, it forms series of salt by the partial or complete replacement of hydrogen atoms. Write names and chemical formula of the salts formed.



NaH_2PO_4 = sodium dihydrogen phosphate



Na_2HPO_4 = sodium monohydrogen phosphate



Q6. Define the following: Catenation and Isomerism

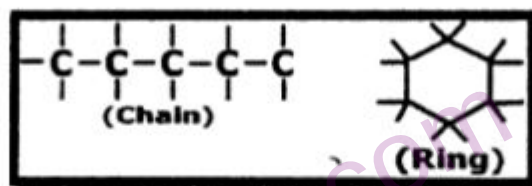
Ans: Catenation:

The self-linking ability of carbon atoms is called catenation

OR

Catenation:

Catenation is the unique ability of carbons to bond itself forming long chains and rings and also to form compounds containing chains and rings together. This property of carbon results in enormous range of compounds of carbon.



Isomerism:

Compound having same molecular formula but different structural formula is called isomers and this phenomenon on the process is called isomerism.

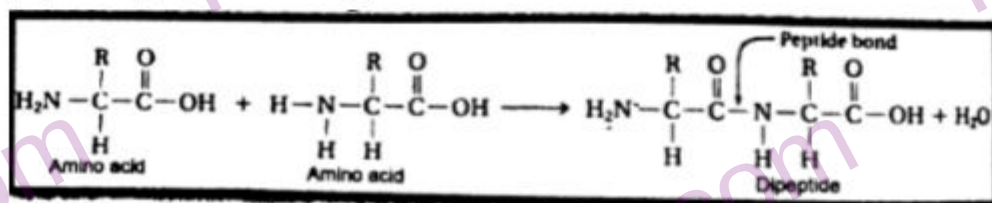
Q7. a. What is an amino acid? Name the functional group an amino acid.

b. Draw peptide linkage.

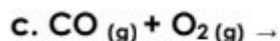
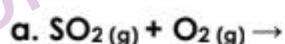
Ans: (a) Amino acids:

Amino acids are biologically important organic compounds made from amine ($-NH_2$) and carboxylic acid ($-COOH$) functional groups, along with a side-chain specific to each amino acid.

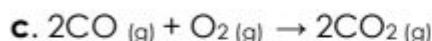
(b) Draw peptide linkage:



Q8. Complete the following reactions:



Ans:



Q9. How acid rain is produced? How does it damage the beauty of our marble building and statues? Write chemical reaction of it.

Ans: Acid rain.

Acid rain is defined as rain having pH less than 5.6.

Gases that cause acid rain.

SO_2 and NO_2

Marble buildings and statues:

Marble buildings and statues are disintegrated by acid rain



Acid rain corrodes metals stone buildings and statues. Marble statues are slowly eroded by acid rain.

Q10. Wood, oil and electric fires required different techniques to put them out. How? Explain.

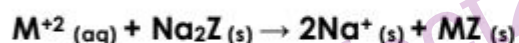
Ans: Wood oil or electric fires required different techniques to put them out. Wood fire is generally extinguished by throwing water on it. Water has high heat of vaporization. So, it absorbs considerable amount of heat from the fire before it vaporizes. So, it gradually cools burning wood and extinguishes fire. Oil fire, on the other hand cannot be put off by water. This is because oil and water do not mix.

At the same time oil is lighter than water. It floats over water. The fire also spreads with flowing water. Water cannot cut of contact between burning oil and oxygen. Oil fire is usually put off by throwing sand on it. Electric fires can only be put out by fire extinguishers.

Q11. How the permanent hardness of water is removed by ion exchange resins?

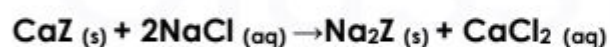
Ans: By ion Exchange Resins:

The hard water is passed through a container filled with a suitable resin containing sodium ions. Zeolite is one of the natural ion exchanger. Chemically it is sodium aluminium silicate. It is usually written as Na_2Z . the Ca^{+2} or Mg^{+2} ions causing the hardness are exchanged with Na^+ ions in the resin



Where $\text{M}^{+2} = \text{Ca}^{+2}, \text{Mg}^{+2}$

the used-up zeolite can be regenerated by heating with concentrated solution of NaCl . This makes the process economical



Q12. Define fatty acids. Give two examples.

Ans: Fatty Acids:

Fats and oils are referred as simple lipids. They are esters of fatty acids with a trihydroxy alcohol, glycerol. For this reason, they are called glycerol esters or glycosides.

Fatty acids are long chain carboxylic acids. They are the building blocks of lipids.

For example, stearic acid, $\text{C}_{17}\text{H}_{35}\text{COOH}$ is one such acid that occurs in animal fats.

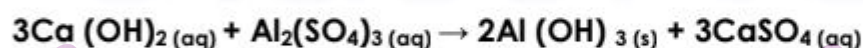
Some common Fatty Acids in Natural fats:

No. of carbon Atoms	Condensed structure	Name	source
4	$\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{COOH}$	Butyric acid	Butter
6	$\text{CH}_3-(\text{CH}_2)_4-\text{COOH}$	Caproic acid	Butter
16	$\text{CH}_3-(\text{CH}_2)_{14}-\text{CH}_2-\text{COOH}$	Palmitic acid	Palm oil
18	$\text{CH}_3-(\text{CH}_2)_{16}-\text{CH}_2-\text{COOH}$	Stearic acid	Beef fat
18	$\text{CH}_3-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{COOH}$	Oleic acid	Olive oil

Q13. How the process coagulation removes dirt particles and bacteria from water?

Ans: Coagulation:

It is the process in which water is treated with slaked lime and alum. These materials react to form a gelatinous mass of aluminum hydroxide.



The aluminum hydroxide carries down dirt particles and bacteria.

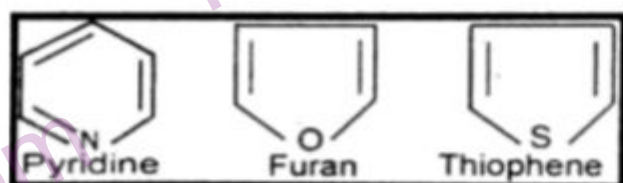
Q14. Draw the structural formula of the following compounds:

a. Pyridine

b. Furan

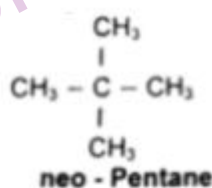
c. Neo-pentane

Ans:



b. Furan

c. Neo-pentane



Q15. Write any three uses of salts.

Ans: Uses of Salts:

Food preservation:

Food preservation keeps food from spoiling and allows it to be stored for later use. Ancient methods for preserving include, drying fruits and vegetables, salting, boiling etc.

Today, methods for preserving food also include the addition of preservatives. They are inhibitors of physical and chemical processes that cause food to spoil. Many foods are grown or produced in one location and then sent across the country or even overseas.

Without preservatives, these foods would spoil long before they reach their destinations. Many salts such as sulphites and benzoates are being used in food for thousands of years.

Many people are allergic or sensitive to preservatives. Some preservatives are safe in small amount and toxic in larger amounts. Hence, Food and Drug Administration Department is given the responsibility for approving the safety and use of preservatives.

Q16. Bromine chloride (BrCl) decompose to form Bromine and Chlorine. For this reaction write:

a. Chemical equation

b. K_c expression

c. Units of K



(b) $K_c = \frac{[\text{Br}_2][\text{Cl}_2]}{[\text{BrCl}]^2}$

(c) $K_c = \frac{[\text{Br}_2][\text{Cl}_2]}{[\text{BrCl}]^2} = \frac{[\text{mole.dm}^{-3}][\text{mole.dm}^{-3}]}{[\text{mole.dm}^{-3}]^2} = \text{no units}$

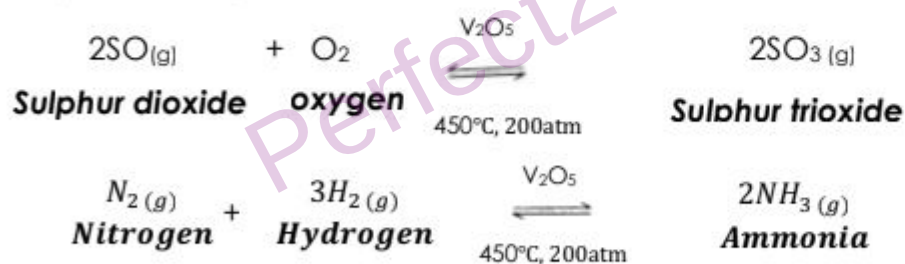
Q17. Briefly write about Lee Chatellier's principle. Give its applications.

Ans: Le Chatellier's principle:

An important principle called Le Chatellier's principle is very useful about chemical equilibrium systems, it says that if you impose a change in concentration, temperature or pressure on a chemical system at equilibrium, the system responds in a way that opposes the change.

Applications of Le Chatellier's principle:

With the application of this principle, components of air i.e. N_2 and O_2 can be used successfully in producing important chemicals, ammonia and sulphuric acid in 98% yield. Both these processes involve reversible reactions, so inadequate (insufficient) number of products are formed under normal conditions.

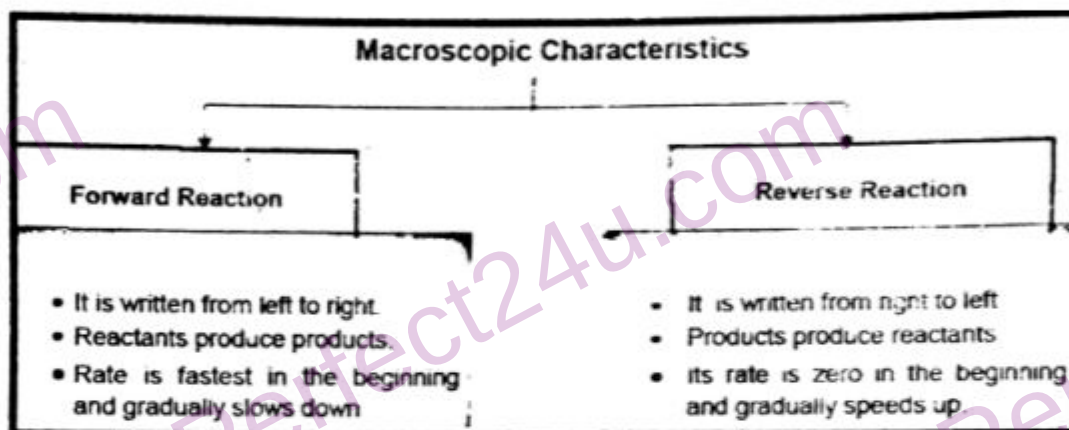


As such these reactions are uneconomical, however, Le Chatellier's principle has made it possible to get maximum amount of products. First, equilibrium is established in the presence of catalyst in minimum time and then by increasing

pressure and decreasing temperature, equilibrium is shifted towards right. Such conditions tend to increase the yield of NH_3 and SO_3 to about 98%.

Q18. Write down the macroscopic characteristics of forward and reverse reaction.

Ans: Macroscopic characteristics of forward and reverse reaction:



Q19. What is pH? Write down its any two valuable applications.

Ans: pH:

pH is defined as the negative logarithm of the molar concentration of H^+ ions in aqueous solutions.

Valuable applications of pH:

Analytical chemist measures pH of solutions pH measurement has valuable applications. For instance, it helps analytical chemist to:

- (ii) To create soil conditions ideal for plant growth.
- (iii) Medical diagnose.
- (iii) Maintaining the correct acid base balance in swimming pools.
- (iv) Electroplating.
- (iv) Manufacturing of medicine etc. tap water and waste water.

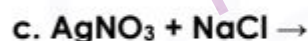
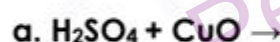
Q20. Etching is an art. Explain the method to carve the pattern into metals or glass.

Ans: Etching:

Etching is an art that uses acid to carve patterns into metal, glass and other materials.

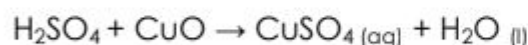
For this a piece of metal or glass is covered with wax, and then a design is etched on to the plate through the wax. The plate is then dipped into a tank of acid. The acid eats away at the exposed portion, which leaves behind textured mark. The plate is then taken out of the acid and cleaned. Ink can also be applied on etching to create colorful design.

Q21. Complete and balance the following chemical reactions:

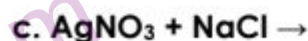
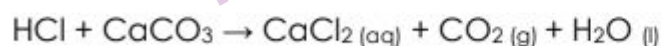


Ans: a. $\text{H}_2\text{SO}_4 + \text{CuO} \rightarrow$

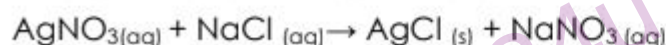
Acid + Metal oxide $\rightarrow$ salt + water



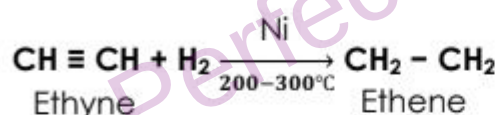
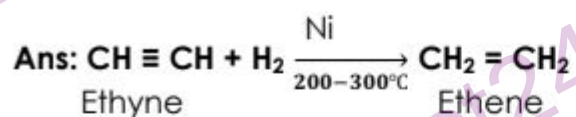
Acid + Metal carbonate $\rightarrow$ salt + carbon dioxide + water



salt_(aq) + salt_(aq) $\rightarrow$ salt_(s) + salt_(aq)



Q22. How can you convert Ethyne into Ethane?

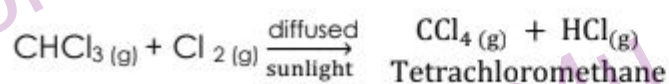
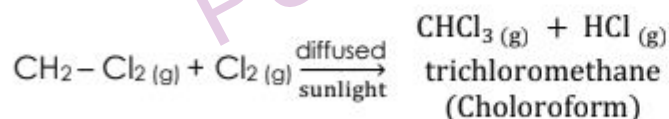
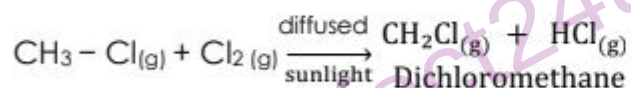
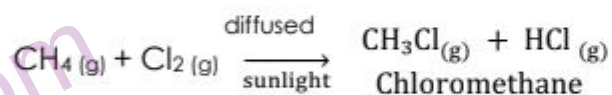


Q23. Describe Halogenation briefly.

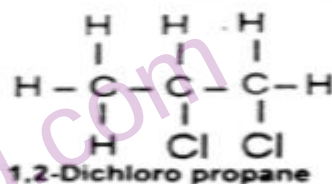
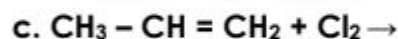
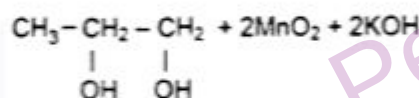
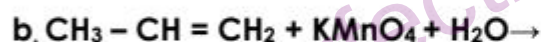
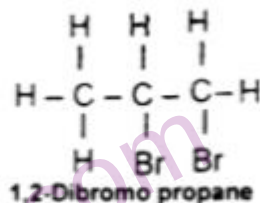
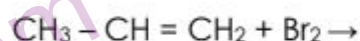
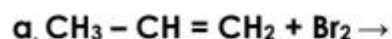
Ans: Halogenation:

The reaction of an alkane and a halogen is a substitution reaction. In this reaction a halogen atom substitutes for one or more of the hydrogen atoms of an alkane.

For examples the reaction of methane and chlorine in diffused sunlight occurs as follows.



Q24. Complete and balance the following chemical reactions:



Q25. What are carbohydrates? Write down their classification. Also give examples of each type.

Ans: Carbohydrates:

Carbohydrates are the most abundant class of organic compounds.

Carbohydrates have the general formula $\text{C}_x(\text{H}_2\text{O})_y$. this formula suggests that they are hydrates of carbon with few exceptions. Plants synthesize carbohydrates through photosynthesis.



Plants convert glucose into starch and cellulose.

Composition of carbohydrates:

Carbohydrates are monomers and polymers of aldehydes and ketones that have numerous hydroxyl groups attached.

Classification of carbohydrates:

Carbohydrates are classified as:

- i) Monosaccharides ii) Oligosaccharides iii) Polysaccharides

i. Monosaccharides: Monosaccharides are the simplest carbohydrates. They cannot be hydrolyzed.

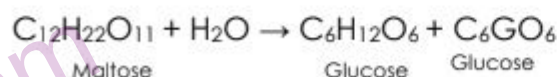
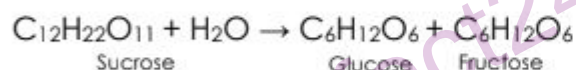
General formula of monosaccharides:

They have general formula $(CH_2O)_n$ where n is 3 to 6 carbon atoms. So, monosaccharides contain 3 to 6 carbon atoms.

Glucose and fructose: The two most familiar monosaccharides are glucose and fructose.

ii. Oligosaccharides:

Carbohydrates which upon hydrolysis form 2 to 9 molecules of monosaccharides or simple sugars are called oligosaccharides.



iii) Two examples of polysaccharides:

cellulose, Glycogen, Starch.

Q26. Write a short note on 'Amino Acids as a Building Block.'

Ans: Amino Acids as Building Block of proteins:

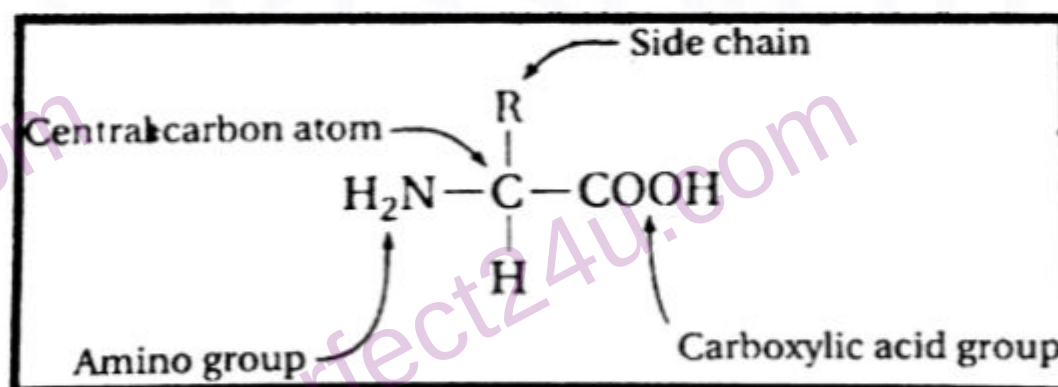
An Amino acid has two functional groups. All amino acids have a carboxyl and amino group in order for them to form long continuous chains of proteins.

Amino acids are building blocks of protein synthesis. Twenty different amino acids are involved in protein synthesis.

Nonessential and essential amino acids:

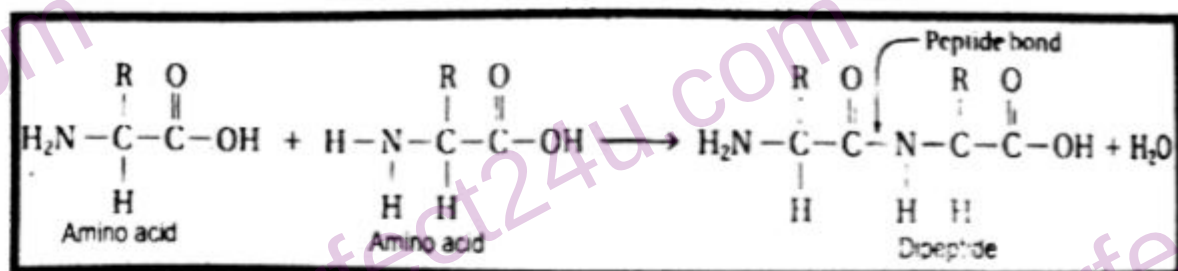
Out of twenty amino acids, our bodies can synthesize only ten such amino acids. Such amino acids are called **nonessential amino acids**. The remaining ten are called **essential amino acids**:

Structure of amino acid:



Joining of two molecules of amino acids:

Molecules of amino acids join together through amino ($-\text{NH}_2$) group of one molecule and carboxyl ($-\text{COOH}$) group of another molecule by eliminating a molecule of water.



Q27. Differentiate between Deoxyribonucleic acid (DNA) and Ribonucleic acid (RNA)?

Ans: Difference between Deoxyribonucleic Acid and Ribonucleic acid:

DNA	RNA
DNA stands for Deoxyribose Nucleic Acid.	RNA stands for Ribo Nucleic Acid.
DNA has the bases adenine, thymine, guanine, cytosine.	RNA has the bases adenine, uracil, guanine, cytosine.
DNA has the sugar deoxyribose.	RNA has the sugar ribose.
DNA is double stranded.	RNA is single stranded.
DNA is found in the nucleus of a cell and in mitochondria.	Depending on the type of RNA, this molecule is found in a cell's nucleus, its cytoplasm and its ribosome.
DNA is self-replicating.	RNA is synthesized from DNA when needed.

Q28. Write down the names and percentage of gases (except Nitrogen and oxygen) that make up air.

Ans: Table 1: Standard Composition of Dry Air (Detailed Analysis):

Gas	% by Volume	% by Weight
Argon	0.93	1.28
Carbon dioxide	0.039	0.0606
Neon	0.0018	0.0012
Helium	0.0005	0.00007
Krypton	0.0001	0.0003
Hydrogen	0.00005	Negligible
Xenon	8×10^{-6}	0.00004

Q29. What do you know about Aurora Borealis?

Ans: Aurora Borealis:

In the northern hemisphere, brilliant light displays, such as shown in figure occur in the ionosphere.

These light displays are called aurora borealis. Auroras are caused by particles from the sun that enter the ionosphere near the poles. These particles strike atoms in the ionosphere, causing them to glow.

Q30. Write down any three natural processes that contribute the air pollution.

Ans: Natural Sources of air pollution:

Many natural processes such as forest fires and dust storms release smoke and dust particles into the air. Volcanoes emit clouds of dust and poisonous gases along with ash. Termites and cows also release large amount of methane in the air.

Considerable electrical discharges in the atmosphere produce nitrogen oxides.

Q31 a. State Le-Chatellier's Principle.

b. What is the unit of k_c in the following chemical equilibrium $k_c = \frac{[HI]^2}{[H_2][I_2]}$

Ans: a. Le-Chatellier's Principle:

If you impose a change in concentration, temperature or pressure on a chemical system at equilibrium, the system responds in a way that opposes the change.

b. Unit of k_c = No units

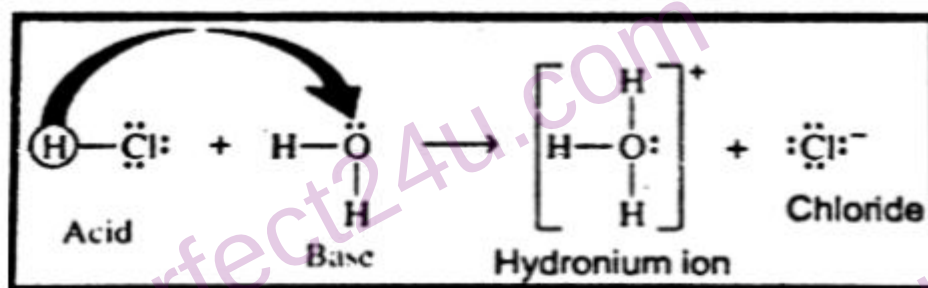
Q32. Write three Macroscopic characteristics of forward and reverse reactions.

Ans: Macroscopic characteristics of forward and reverse reaction:

Forward reaction	Reverse reaction
i. It is written from left to right.	i. It is written from right to left.
ii. Reactants produce products	ii. Products produce reactants.
ii. Rate is fastest in the beginning and gradually slows down.	iii. Its rate is zero in the beginning and gradually speeds up.

Q33. Show that H_2O is Bronsted Base, while HCl is Bronsted Acid. Write Chemical equation.

Ans: An acid is a proton donor and a base are a proton acceptor.



HCL is donating a proton and water is accepting it. Hence HCl is an acid and water are a base.

Q34. a. Define Neutralization Reaction. Give an example

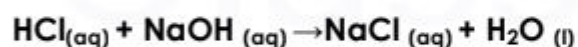
b. Write names of any two acidic salts.

Ans: a. Neutralization:

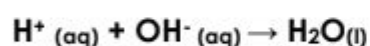
Reaction between an acid and a base is called neutralization reaction.

Explanation:

Acid + Base → salt + water



Actually, neutralization is the reaction between H^+ ions of an acid and OH^- ions of a base.



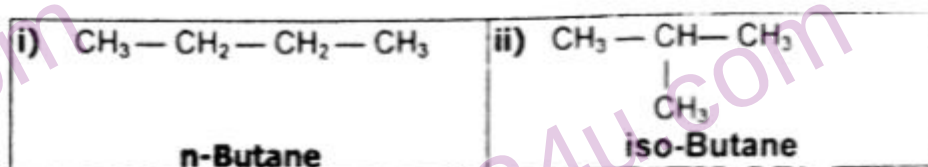
b. Acidic Salts:

NaHSO_4 , CaHPO_4 (Names or formula of any two acidic salts)

Q35. What is Isomerism? Draw the structure of Isomers of Butane.

Ans: Isomerism:

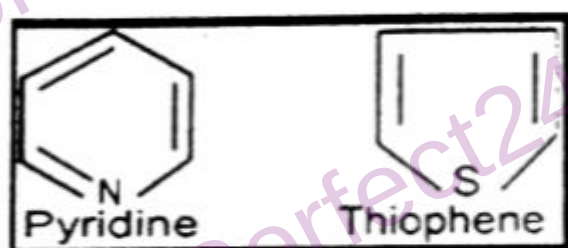
The phenomenon in which different compounds have different structural formulas same molecular formula is called Isomerism.



Q36. Define Heterocyclic Compounds. Draw the structure of pyridine and Thiophene.

Ans: Heterocyclic compounds:

Cyclic compounds that contain one or more atoms other than carbon atoms in the ring are called heterocyclic compounds e.g.



Q37. How are Alkanes prepared from the following?

a. Alcohol

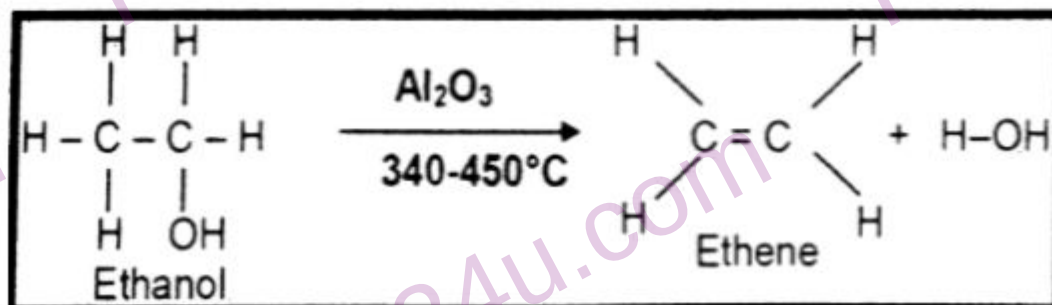
b. Alkyl halides

Ans: Preparation of Alkenes:

Alkenes are prepared by the following method.

a. By Dehydration of Alcohols:

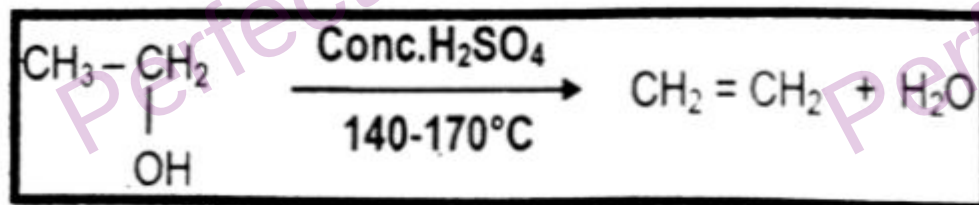
Dehydration means loss of water. Alcohols dehydrate when their vapours are passed over heated alumina.



OR

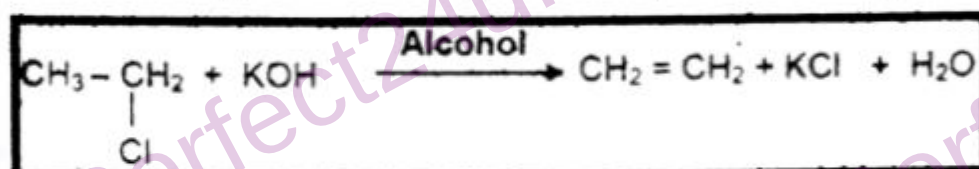
Phosphoric acid (H_3PO_4) phosphorus pentoxide (P_4O_{10}) can also be used as catalyst for dehydration of alcohols.

Concentrated Sulphuric acid is also used for dehydration.



b. By dehydrohalogenation of alkyl halides:

Alkyl halides on heating with alcoholic potassium hydroxide undergo



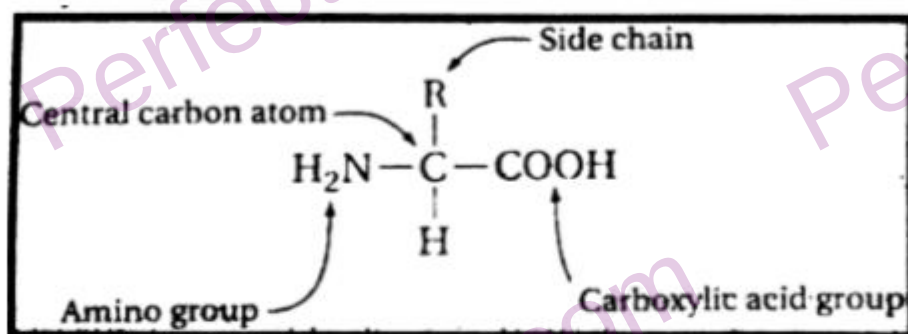
Q38. Write three uses of proteins.

Ans: Uses of Proteins: (any three uses)

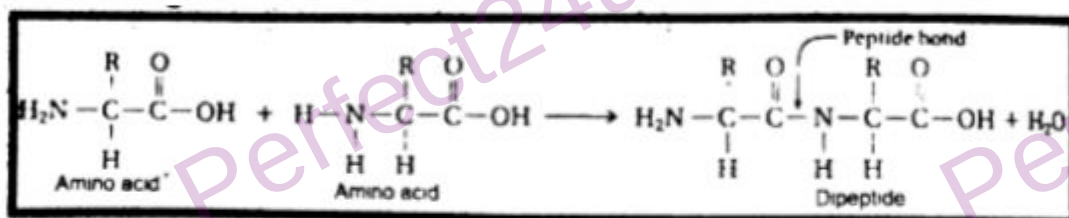
- i. We require proteins in our diet, to provide amino acids to make muscles, hair, enzymes and repair of body tissues.
- ii. Proteins are essential for the formation of protoplasm and components of cells.
- iii. Proteins are essential for both physical and mental growth especially in children.
- iv. A protein called gelatin is obtained by heating bones and tendons in water. It is used in bakery goods.
- v. Enzymes are proteins that catalyze specific biological reactions, without which life would be impossible.
- vi. The antibodies that help us to fight against disease are large protein molecules.

Q39. What are the two functional groups found in Amino acids? Draw peptide linkage.

Ans: Two functional groups in Amino acids: Amino group and carboxylic group.



Peptide linkage:



40. Define pollutant. Give some effects of Sulphur dioxide on human beings.

Ans: pollutants:

Anything that is in the air, water or soil which has a harmful effect on some part of the environment is called pollutant.

Effects of Sulphur dioxide (SO₂) on human:

1. Sulphur dioxide is readily absorbed in the respiratory system.
2. It aggravates the symptoms of people who suffer from asthma, bronchitis, emphysema and other lung diseases.

Q41. There is scientific evidence that CFCs contribute to the depletion of ozone. Explain why.

Ans: Chlorofluorocarbons (CFCs):

Chlorofluorocarbons are a group of chemically uncreative compounds that have been widely used as solvents. CFCs trap heat in the atmosphere and cause global warming. They have been attacking the ozone layer in the stratosphere very badly for the last three decades. CFCs may also cause skin allergy, damage to liver, kidneys and nervous system.

Q42. What are the causes of Hardness of water? Also write their chemical equations.

Ans: Causes of hardness in water:

Rainwater dissolves carbon dioxide as it falls through the atmosphere. Carbon dioxide reacts with water to produce carbonic acid, which is a weak acid.



This carbonated water passes over or through the rocks containing calcium carbonate or magnesium carbonate, the acid present in it attacks these rocks. It slowly dissolves them, forming calcium and magnesium hydrogen carbonates.



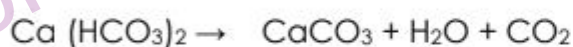
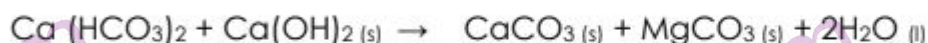
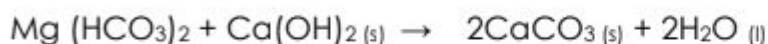
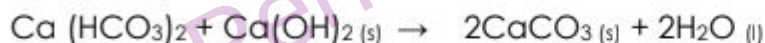
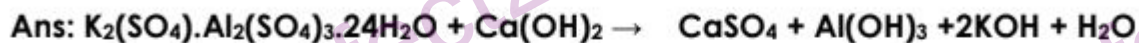
Some rocks may contain gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) or anhydride (CaSO_4) or Kieserite ($\text{MgSO}_4 \cdot \text{H}_2\text{O}$) which is sparingly soluble in water. The presence of these dissolved salts causes the water to become hard.

Q43. Write chemical equation for the following:

a) Reaction of slaked lime with Alum

b) Carbonated rain water with lime stone.

c) Reaction that occurs when temporary hard water is boiled.



Q44. What is crude oil? How is crude oil formed?

Ans: Crude oil:

The dark brownish viscous liquid that oozes out from rocks is called crude oil.

Formation of crude oil:

It is believed that petroleum was formed from organisms that lived hundreds of millions of years ago. Plants and animals in the seas died. Their remains piled up. Layers of sand, rock and mud buried the dead organisms. Over time, in the absence of air, heat and pressure of sediments and bacterial effect changed the material into dark brownish viscous liquid called petroleum. It is also called crude oil.

Q45. Define carbohydrates. How do plants prepare carbohydrates?

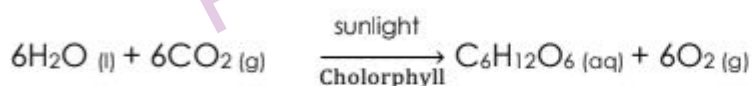
Ans: Carbohydrates:

Carbohydrates are the most abundant class of organic compounds.

Carbohydrates have the general formula $C_x(H_2O)_y$. this formula suggests suggest that they are hydrates of carbon with few exceptions.

Synthesis of Carbohydrates:

Plants synthesize carbohydrates through photosynthesis.



Plants convert glucose into starch and cellulose. Carbohydrates are monomers and polymers of aldehydes and ketones that have numerous hydroxyl groups attached.

Q46 Following reaction can occur during lighting storms:



For this reaction write:

a. Equilibrium constant expression

b. Determine the units of K_c

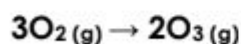
c. Forward and reverse Reaction

Ans:

(a) $K_c = \frac{[O_3]^2}{[O_2]^3}$

(b) $K_c = \frac{[O_3]^2}{[O_2]^3} = \frac{[\text{mole.dm}^{-3}]^2}{[\text{mole.dm}^{-3}]^3} = [\text{mole.dm}^{-3}]^{-1} = \text{mole}^{-1}\text{dm}^3$

(c) Forward reaction:



Reverse reaction:



Q47. State three uses of equilibrium constant?

Ans: Uses of equilibrium constant (any three)

- Determine the equilibrium concentration of equilibrium mixture knowing the initial concentration of reactants.
- Predict the direction of chemical reaction.
- Predict the extent of a chemical reaction.
- Predict the effect of change in conditions of the chemical reaction on the equilibrium state.

Q48. Briefly describe Acidity of stomach.

Ans.

- The main component of digestive or gastric juice in the stomach is Hydrochloric acids.
- Sometimes too much acid is secreted in the stomach, which causes indigestion. This is called acidity in stomach.

Q49. Define and give examples of Lewis acid.

Ans. Lewis acid:

A Lewis acid is substance that can accept a pair of electrons to form a coordinate covalent bond.

BF_3 , AlCl_3 .

Q50. What is condensed structural formula? Write condensed structural formula of :

a. Hexane

b. Nonane

Ans: condensed structural formula. The formula that indicates the group of atoms joined together to each carbon atom in a straight chain or a branched chain.

Condensed structural formula of

(a) Hexane $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ OR $\text{CH}_3(\text{CH}_2)_4\text{CH}_3$

(b) Nonane $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ OR $\text{CH}_3(\text{CH}_2)_7\text{CH}_3$

Q51. What are the reasons for the formation of millions of organic compounds?

Ans: The existence of millions of organic compounds is due to following reasons.

(a) Catenation:

The ability of carbon atoms to link with other carbon atoms to form long chain and rings. Eg. $\text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_3$

(b) Isomerism:

Two or more compounds having same molecular formula but different structural formula is called isomers and phenomenon is called isomerism.

(c) Multiple Bonding:

Carbon can make multiple bonding i.e. double and triple bond.

Q52. Draw electron dot- cross structure for

a. propane

b. propene

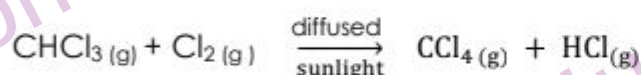
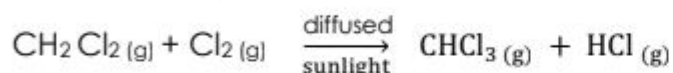
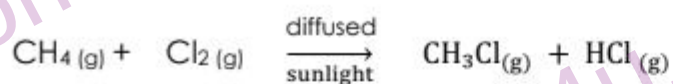
c. propyne

Ans:

(a) Propane:	(b) Propyne:	(c) Propene:
$ \begin{array}{ccccc} \text{H} & \text{H} & \text{H} & & \\ \times & \times & \times & & \\ & \cdot & \cdot & & \\ \text{H} \times \cdot \text{C} & \cdots & \text{C} & \cdots & \text{C} \cdot \times \text{H} \\ & \cdot & \cdot & & \\ & \times & \times & & \\ & \text{H} & \text{H} & & \text{H} \end{array} $	$ \begin{array}{ccccc} \text{H} & & \text{H} & & \\ \times & & \times & & \\ & & \cdot & & \\ \text{C} & \vdots \vdots & \text{C} & \cdots & \text{C} \cdot \times \text{H} \\ & & \cdot & & \\ & & \times & & \\ & & \text{H} & & \end{array} $	$ \begin{array}{ccccc} \text{H} & \text{H} & \text{H} & & \\ \times & \times & \times & & \\ & \cdot & \cdot & & \\ \text{C} & \vdots \vdots & \text{C} & \cdots & \text{C} \cdot \times \text{H} \\ & & \cdot & & \\ & & \times & & \\ & & \text{H} & & \text{H} \end{array} $

Q53. Write at least three reactions of methane and chlorine in diffuse sunlight.

Ans: The reaction of methane and chlorine in diffused sunlight occurs as follows.



Q54. Differentiation between fats and oils?

Ans: Difference between fats and oil:

Oils	Fats
Oils exist in liquid form at room emperature.	Fats exist in solid for at room emperature.
They are unsaturated fatty acids.	They are saturated fatty acids.

Q55. What five elements are primarily responsible for the makeup of DNA and RNA?

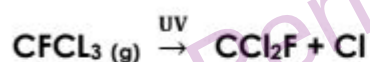
Ans: The following elements are responsible for the makeup of DNA & RNA

Carbon, Hydrogen and Oxygen

Phosphorous, Nitrogen

Q56. There is scientific evidence that CFCs contribute to the depletion of ozone, why?

Ans: They are so inert that they do not react with any chemical in troposphere. They diffuse into ozone layer U.V. radiation break CFC's molecules producing chlorine and free radicals.



Cl reacts with O_3 to form ClO and O_2 , ClO reacts with (produces by the decomposition of O_3 by UV radiations and generates Cl radicals



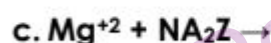
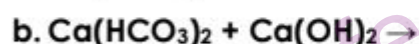
Here Cl acts as a catalyst in the destruction of ozone.

Q57. What is a catalytic converter?

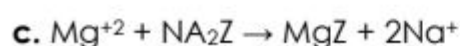
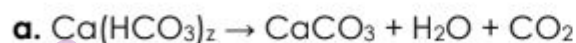
Ans: A catalytic converter transforms CO into CO_2 , NO into N_2 and H_2 and unburnt Hydrocarbon 2CO_2 and water.

Metals like platinum, palladium and rhodium are used as catalyst in the converters.

Q58. Complete the following reactions:



Ans:



Q59. Why it is advisable to wash hands well with soap after using bathrooms?

Ans: viruses, bacteria and dust particles are continuously spreading around us in washrooms. So, after using bathrooms you may be infecting from such pathogenic organisms which are responsible for cold, diarrhea and flu etc. washing soda regularly can help you healthy by controlling the spread of germs.

Q60. Define petroleum.

Ans: Petroleum:

Petroleum is derived from Latin words petre (rock) and oleum (oil). It is also called as crude oil.

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

Perfect24u.com

www.Perfect24u.com