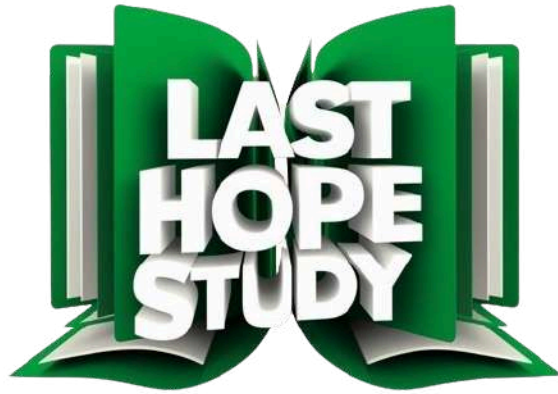


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Chemistry 10

Chapter 9 - Chemical Equilibrium

Exercise - Short Questions

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1. What are irreversible reactions? Give a few characteristics of them?

The reactions, in which the products do not recombine to form reactants, are called irreversible reactions.

Characteristics

- i. They are supposed to complete
- ii. They are represented by putting a single arrow between the reactants and products.
- iii. Dynamic equilibrium never established in irreversible reactions

2. Define chemical equilibrium state.

When the rate of the forward reaction is the same as the rate of reverse reaction, the

Composition of the reaction mixture remains constant, it is called a chemical equilibrium state.


Two types of equilibrium are:

- i. Static equilibrium.
- ii. Dynamic equilibrium

3. Give the characteristics of reversible reaction.

reactions in which the products can recombine to form reactants are called reversible reactions.

characteristics

- i. These reactions never go to completion.
- ii. They are represented by a double arrow  between reactants and products.
- iii. These reactions proceed in both ways, i.e., they consist of two reactions; forward and reverse.

4. How is dynamic equilibrium established?

When reaction does not stop, only the rates of forward and reverse reactions become equal to each other but take place in opposite directions. This is called dynamic equilibrium state. Dynamic means reaction is still continuing.

At dynamic equilibrium state:

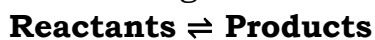
Rate of forward reaction = Rate of reverse reaction

5. Why at equilibrium state reaction does not stop?

At equilibrium state, a reaction does not stop. Forward and reverse reactions keep on taking place at the same rate but in opposite direction

6. Why is equilibrium state attainable from either way?

An equilibrium state is attainable from either way, i.e. starting from reactants or from products. Because it may start from reactant to give products while products recombine to give reactant again.



7. What is relationship between active mass and rate of reaction?

According to law of mass action "the rate of a reaction is directly proportional to the product of the active masses of the reacting substances".

Rate of reaction \propto product of the active masses of the reacting substances

8. Derive equilibrium constant expression for the synthesis of ammonia from nitrogen and hydrogen.



The rate of forward reaction $R_f = K_f [\text{N}_2] [\text{H}_2]^3$

The rate of reverse reaction $R_r = K_r [\text{NH}_3]^2$

The expression for the equilibrium constant for this reaction is

$$K_c = \frac{[\text{NH}_3]^2}{[\text{N}_2][\text{H}_2]^3}$$

9. Write the equilibrium constant expression for the following reactions:



The expression for the equilibrium constant for this reaction is

$$K_c = \frac{[\text{HI}]^2}{[\text{H}_2][\text{I}_2]}$$



The expression for the equilibrium constant for this reaction is

$$K_c = \frac{[\text{CO}][\text{H}_2]^3}{[\text{CH}_4][\text{H}_2\text{O}]}$$

10. How direction of a reaction can be predicted?

Direction of a reaction at a particular moment can be predicted by inserting the concentration of the reactants and products at that particular moment in the equilibrium expression.

The direction of a reaction can be predicted by comparing Q_c and K_c

If $Q_c < K_c$; the reaction goes from left to right, i.e., in forward direction to attain equilibrium.

If $Q_c > K_c$; the reaction goes from right to left, i.e., in reverse direction to attain equilibrium.

If $Q_c = K_c$; forward and reverse reactions take place at equal rates i.e., equilibrium has been attained.

11. How can you know that a reaction has achieved an equilibrium state?

If $Q_c = K_c$; forward and reverse reactions take place at equal rates i.e., equilibrium has been attained.

12. What are the characteristics of a reaction that establishes equilibrium state at once?

- i. In these reaction the equilibrium has established with a very small conversion of reactants to products.
- ii. These reaction never goes to completion.
- iii. For these reaction value of K_c is very small

13. If reaction quotient Q_c of a reaction is more than K_c , what will be the direction of the reaction?

If $Q_c > K_c$; the reaction goes from right to left, i.e., in reverse direction to attain equilibrium.

14. An industry was established based upon a reversible reaction. It failed to achieve products on commercial level. Can you point out the basic reasons of its failure being a chemist?

If an industry was established based upon a reversible reaction, it cannot achieved desired commercial products because product again converted into reactants.

Long Questions

1. Explain Reversible reaction with suitable example. Book Pg. No. 2
2. Explain macroscopic of dynamic equilibrium. Book Pg. No. 6
3. State the law of mass action and derive the expression for equilibrium constant for general reaction. Book Pg. No. 6
4. What is the importance of equilibrium constant. Book Pg. No. 12
5. Difference between Forward and reverse reactions. Book Pg. No. 6

Chemistry 10

Chapter 10 - Acid, Bases and Salts

Exercise - Short Questions



Download All Subjects Notes from website www.lasthopestudy.com

1. Name three common household substances having

a. pH value greater than 7

b. pH value less than 7

c. pH value equal to 7

1. Name three common household substances having

a. pH value greater than 7: Baking soda, Bleach, soap

b. pH value less than 7: Vinegar, Lemon juice, Milk.

c. pH value equal to 7: Pure water.

2. Define a base and explain that all alkalis are bases, but all bases are not alkalis.

A base is a substance that can accept hydrogen ions (H^+) or donate a pair of electrons.

All Alkalies are Bases, but not all Bases are Alkalies

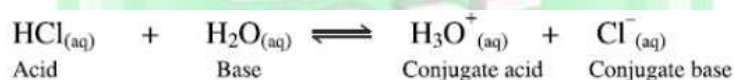
All alkalies are bases because they dissolve in water and produce hydroxide ions (OH^-).

However, not all bases are alkalies because some bases do not dissolve in water.

3. Define Bronsted-Lowry base and explain with an example that water is a Bronsted-Lowry base.

A Bronsted-Lowry base is a substance that can accept a proton (H^+) from another substance.

Water (H_2O) acts as a Bronsted-Lowry base when it accepts a proton from an acid like HCl, forming hydronium ion (H_3O^+).



4. How can you justify that Bronsted-Lowry concept of acid and base is applicable to non-aqueous solutions?

The Bronsted-Lowry concept of acids and bases is applicable to non-aqueous solutions because it defines acids as proton donors and bases as proton acceptors, which does not depend on the presence of water. This means that the transfer of protons can occur in any solvent, making the concept versatile and widely applicable.

5. Which kind of bond is formed between Lewis acid and a base?

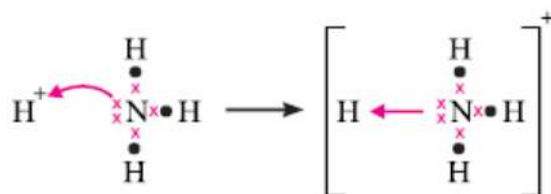
A coordinate covalent bond is formed between Lewis acid and a base and form adduct.

6. Why H^+ ion acts as a Lewis acid?

According to Lewis and acid concept:

An acid is a substance (molecule or ion) which can accept a pair of electrons.

The H^+ (proton) act as Lewis acid because it has empty orbital that can accommodate a pair of electron.



7. Name two acids used in the manufacture of fertilizers.

Two acids used in the manufacture of fertilizers are:

1. Sulphuric acid (H_2SO_4)

2. Nitric acid (HNO₃)

8. Define pH. What is the pH of pure water?

pH is the negative logarithm of molar concentration of the hydrogen ions. That is,

$$\text{pH} = -\log[\text{H}^+]$$

The pH of pure water is 7.

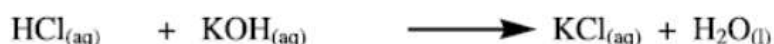
9. How many times a solution of pH 1 will be stronger than that of a solution having pH 2?

Since the pH scale is logarithmic, a solution of pH 1 has 10 times higher concentration of [H⁺] than that of a solution of pH 2

10. Define the followings: i. Normal salt ii. Basic salt

i. Normal salt

A salt formed by the total replacement of ionizable H⁺ ions of an acid by a positive metal ion or NH₄⁺ ions is called normal or neutral salt. These salts are neutral to litmus,



ii. Basic salt

Basic salts are formed by the incomplete neutralization of a polyhydroxy base by an acid.



11. Na₂SO₄ is a neutral salt while NaHSO₄ an acid salt. Justify.

Na₂SO₄ is a neutral salt because it is formed by complete replacement of H⁺ ions from metal ions while NaHSO₄ is an acidic salt because it has one H⁺ ion itself

12. Give a few characteristic properties of salts.

Characteristic properties of salts

- i. Salts are ionic compounds found in crystalline form.
- ii. They have high melting and boiling points
- iii. Salts are neutral compounds

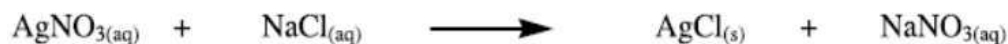
13. How are the soluble salts recovered from water?

Soluble salts are often prepared in water. Therefore, they are recovered by evaporation or crystallization.

14. How are the insoluble salts prepared?

Preparation of insoluble salts

In this method, usually solutions of soluble salts are mixed. During the reaction exchange of ionic radicals takes place to produce two new salts. One of the salts is insoluble and the other is soluble. The insoluble salt precipitates.



15. Why is a salt neutral, explain with an example?

Salts are neutral compounds. Although, they do not have equal number of positive and negative ions, but have equal number of positive and negative charges.

For example NaCl and MgCl₂.

16. Name an acid used in the preservation of food.

Benzoic acid (C₆H₅COOH)

Acetic acid (CH₃COOH)

17. Name the acids present in:

i. Vinegar

ii. Ant sting

iii. Citrus fruit

iv. Sour milk

- | | | |
|-------|--------------|------------------------------------|
| (i) | Vinegar: | Acetic acid (CH ₃ COOH) |
| (ii) | Ant sting | Formic acid (HCOOH) |
| (iii) | Citrus fruit | Citric acid |
| (iv) | Sour milk | Lactic acid |

18. How can you justify that Pb(OH)NO₃ is a basic salt?

Basic salts are formed by the incomplete neutralization of a polyhydroxy base by an acid. As Pb(OH)NO₃ contain hydroxide ion (OH⁻) so it is a basic salt.

19. You are in a need of an acidic salt. How can you prepare it?

These salts are formed by partial replacement of a replaceable H⁺ ions of an acid by a positive metal ion.



20. Which salt is used to prepare plaster of Paris?

Calcium sulphate (CaSO₄ · 2H₂O) is used to prepare plaster of Paris.





Chemistry 10

Chapter 11 - Organic Chemistry

Exercise - Short Questions

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1. What is meant by the term catenation? Give an example of a compound that displays catenation.

The ability of carbon atoms to link with other carbon atoms to form long chains and large rings is called catenation.

Example:



n-pentane



Benzene

2. How is coal formed?

Coal was formed by the decomposition of dead plants buried under the Earth's crust millions of years ago. Conversion of wood into coal is called carbonization. It is a very slow biochemical process. It takes place in the absence of air under high pressure and high temperature over a long period of time (about 500 millions of years)

3. What is the importance of natural gas?

- Natural gas is used as fuel in homes as well as in industries.
- It is used as fuel in automobiles as compressed natural gas (CNG).
- Natural gas is also used to make carbon black and fertilizer

4. Justify that organic compounds are used as food.

The food we eat daily such as milk, eggs, meat, vegetables, etc., contain carbohydrates, proteins, fats, vitamins, etc., are all organic stuff.

5. How are alkyl radicals formed? Explain with examples.

Alkyl radicals are derivatives of alkanes. They are formed by the removal of one of the hydrogen atoms of an alkane and are represented by a letter 'R'. Their name is written by replacing "ane" of alkane with 'yl'

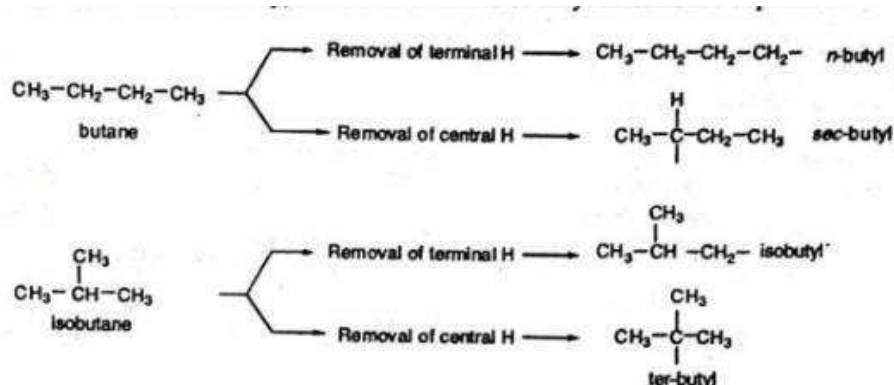
Example

Alkane	Molecular Formula	Alkyl radical	Name
Methane	CH ₄	CH ₃ —	Methyl

6. What is the difference between n-propyl and isopropyl radicals ? Explain with structure.

n-propyl	Isopropyl
It is formed, when terminal hydrogen is removed from the structure of propane. n-propyl is the radical of propane.	It is formed, when central carbon is removed. It is called isopropyl. Isopropyl is also the radical of propane.
Example: CH ₃ - CH ₂ - CH ₃ → Removal of terminal "H"	Example: CH ₃ - CH ₂ - CH ₃ → Removal of terminal "H"
$\begin{array}{c} \downarrow \\ \text{CH}_3 - \text{CH}_2 - \text{CH}_2 \\ \text{n-propyl} \end{array}$	$\begin{array}{c} \downarrow \\ \text{H} \\ \\ \text{CH}_3 - \text{CH} - \text{CH}_3 \\ \text{Iso-butyl} \end{array}$

7. Explain different radicals of butane.



8. Define functional group with an example.

An atom or group of atoms or presence of double or triple bond which determines the characteristic properties of an organic compound is known as the functional group. For example, -OH group is the functional group of alcohols

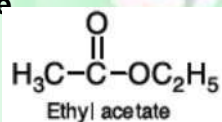
9. What is an ester group? Write down the formula of ethyl acetate.

Organic compounds consisting of RCOOR' functional group are called esters.

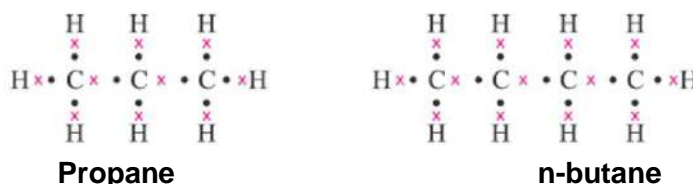
Their general formula is $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{OR}'$

where R and R' are alkyl groups. They may be same or different.

Formula of ethyl acetate

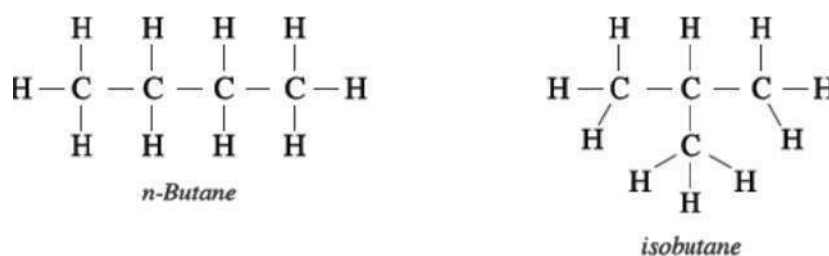


10. Write down the dot and cross formulae of propane and n-butane?



11. Define structural formula. Draw the structural formulae of n-butane and isobutane.

Structural formula of a compound represents the exact arrangement of the different atoms of various elements present in a molecule of a substance

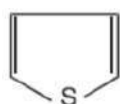


12. Write classification of coal.

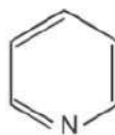
Type of Coal	Carbon Contents	Uses
Peat	60%	It is inferior quality coal used in kiln.
Lignite	70%	It is soft coal used in thermal power stations.
Bituminous	80%	It is common variety of coal used as house-hold coal.
Anthracite	90%	It is superior quality hard coal that is used in industry.

13. What are heterocyclic compounds? Give two examples.

Heterocyclic compounds Cyclic compounds that contain one or more atoms other than that of carbon atoms in their rings are called heterocyclic compounds.



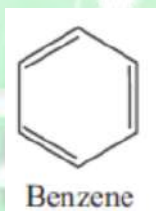
Thiophene



Pyridine

14. Why are benzene and other homologous compounds of benzene called aromatic compounds?

These organic compounds contain at least one benzene ring in their molecule. They are called aromatic because of aroma or smell they have. For example:





Chemistry 10
Chapter 12 - Hydrocarbons
Exercise - Short Questions

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1. Differentiate between saturated and unsaturated hydrocarbons.

Saturated Hydrocarbons	Unsaturated hydrocarbons
<ul style="list-style-type: none"> The compounds in which all the four valences of carbon atoms are fully satisfied by single bonds with other carbon atoms and hydrogen atoms is called saturated hydrocarbons. 	<ul style="list-style-type: none"> The compounds in which two carbon atoms are linked by a double or triple bond are called hydrocarbons.
<ul style="list-style-type: none"> Saturated hydrocarbons are also called alkanes. 	<ul style="list-style-type: none"> Unsaturated hydrocarbons are also called alkenes (with double covalent bond) and alkynes (with triple covalent bond.)
<ul style="list-style-type: none"> Their general formula is C_nH_{2n+2}. 	<ul style="list-style-type: none"> Their general formula is C_nH_{2n} for alkene and C_nH_{2n-2} for alkyne.
Example: CH_4 (Methane) H_3C-CH_3 (Ethane)	Example: $H_2C=CH_2$ (Ethene) $HC\equiv CH$ (Ethyne)

2. A compound consisting of four carbon atoms has a triple bond in it. How many hydrogen atoms are present in it?

A compound consisting of four carbon atoms has a triple bond in it, contain six hydrogen.

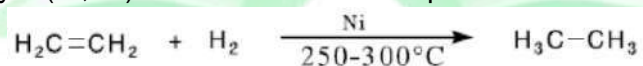
Formula: $H_3C-C\equiv C-CH_3$

3. Why are the alkanes called 'paraffins'?

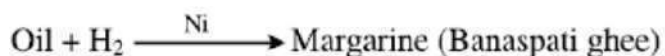
The simplest hydrocarbons are alkanes. In these compounds, all the bonds of carbon atoms are single that means valencies of carbon atoms are saturated. Therefore, they are least reactive. That is the reason, alkanes are called paraffins (para means less, and affins means affinity or reactivity).

4. What do you know about hydrogenation of alkenes?

Hydrogenation means addition of molecular hydrogen to an unsaturated hydrocarbon in the presence of a catalyst (Ni, Pt) to form saturated compound.

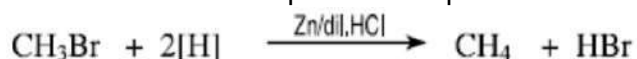


On industrial scale, this reaction is used to convert vegetable oil into margarine (Banaspoti ghee).



5. How are alkyl halides reduced?

Reduction means addition of nascent hydrogen. In fact, it is a replacement of a halogen atom with a hydrogen atom. This reaction takes place in the presence of Zn metal and HCl.



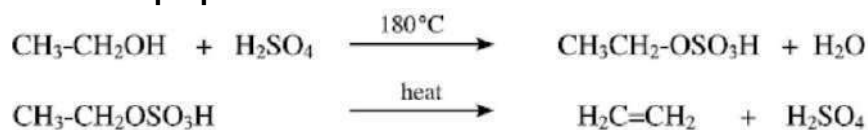
6. Why are the alkanes used as fuel?

Alkanes burn in the presence of excess of air or oxygen to produce a lot of heat, carbon dioxide and water. This reaction takes place in automobile combustion engines, domestic heaters and cooking appliances. It is highly exothermic reaction and because of it alkanes are used as fuel



7. How can you prepare ethene from alcohol and ethyl bromide?

From Alcohols can be prepared as follow:



From ethyl bromide can be prepared as follow:



8. Identify propane from propene with a chemical test.

Pass the both gases through bromine water. If the color of bromine discharges, it is propene, otherwise it is propane.

9. Why are the alkenes called 'olefins'?

Alkenes are also known as olefins (a Latin word meaning oil forming) because first members form oily products when react with halogens.

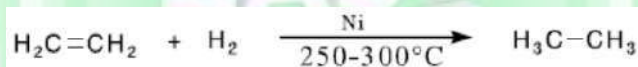
10. Why alkane can't be oxidized with KMnO4 solution

Alkanes are saturated hydrocarbons and they are least reactive that's why alkane can't be oxidized with KMnO4 solution.

Alkane + KMnO4 → No reaction

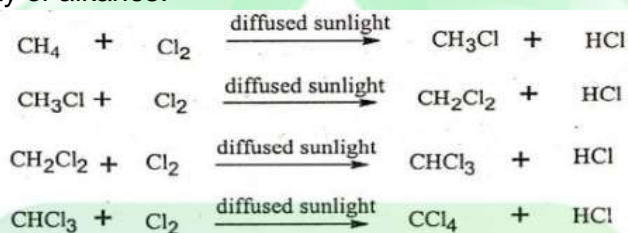
11. What are the addition reactions? Explain with an example.

These are the reactions in which the products are formed by the addition of some reagents like H₂, Cl₂, etc., to an unsaturated organic compound.



12. Justify that alkanes give substitution reactions.

A reaction in which one or more hydrogen atoms of a saturated compound are replaced with some other atoms (like halogen) is called a substitution reaction. These reactions are a characteristic property of alkanes.



13. Both alkenes and alkynes are unsaturated hydrocarbons. State the one most significant difference between them.

Alkenes	Alkynes
<ul style="list-style-type: none"> The compounds in which two carbon atoms are linked by a double bond are called alkenes. 	<ul style="list-style-type: none"> The compounds in which two carbon atoms are linked by a Triple bond are called alkenes.
<ul style="list-style-type: none"> Their function group is $\begin{array}{c} \text{-C}=\text{C-} \\ \quad \end{array}$ 	<ul style="list-style-type: none"> Their functional group is $\text{-C}\equiv\text{C-}$

14. Write the molecular, dot and cross and structural formula of ethyne.

Name	Molecular Formula	Structural Formula	Cross and dot Formula
Ethyne	C ₂ H ₂	H-C≡C-H	H•C≡C•H

16. Give the physical properties of alkanes.

- i. They are nonpolar, therefore, they are insoluble in water but soluble in organic solvents.
- ii. The density of alkanes increases gradually with the increase of molecular size.
- iii. The alkanes become more viscous as their molecular sizes increase

17. How can you identify ethane from ethene?

Pass the both gases through bromine water. If the color of bromine discharges, it is ethene, otherwise it is ethane.

18. Why colour of bromine water discharges on addition of ethene in it?

When bromine water is added to ethene in an inert solvent like carbon tetrachloride, its colour is discharged at once. In the reaction, double bond of ethene is converted into a single bond by the addition of a molecule of bromine. This reaction is used to identify the unsaturation of an organic compound

19. State one important use of each:

Ethene: It is used as a general anaesthetic.

Acetylene: It is used for the ripening of fruits.

Chloroform: Chloroform is used as a solvent for rubber, waxes, etc., and for anaesthesia

Carbon tetrachloride: Carbon tetrachloride is used as an industrial solvent and in dry cleaning.



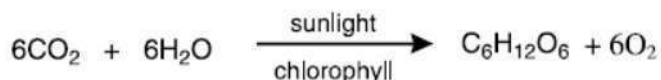


Chemistry 10
Chapter 13 - Biochemistry
Exercise - Short Questions

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1. How plants synthesize carbohydrates?

Carbohydrates are synthesized by plants through photosynthesis process from carbon dioxide and water in the presence of sunlight and green pigment chlorophyll.

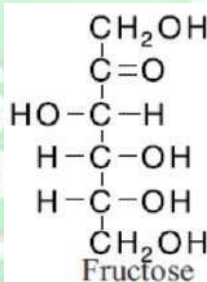
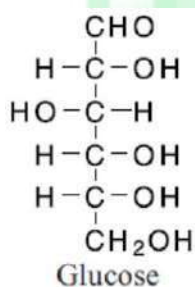


2. Give the characteristics of monosaccharides.

- i. Monosaccharides are white crystalline solids.
- ii. They are soluble in water and have sweet taste.
- iii. They cannot be hydrolyzed.
- iv. They are reducing in nature, therefore, these are called reducing sugars.

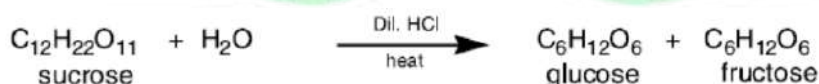
3. What is the difference between glucose and fructose?

Glucose	Fructose
<ul style="list-style-type: none"> • Glucose is pentahydroxy aldehyde in nature. 	<ul style="list-style-type: none"> • Fructose is pentahydroxy ketone in nature.



4. Give an example of a disaccharide. How is it hydrolyzed into monosaccharides?

The most important oligosaccharides are disaccharides like sucrose. On hydrolysis, sucrose produces one unit of glucose and one unit of fructose



5. Give the characteristics of polysaccharides.

- i. They are amorphous solids.
- ii. They are tasteless and insoluble in water.
- iii. They are non-reducing in nature.

6. Where are the proteins found?

Proteins are present in all living organisms. They make up bulk of the non-bony structure of the animal bodies. They are major component of all cells and tissues of animals. About 50% of the dry weight of cell is made up of proteins. They are found in muscles, skin, hair, nails, wool, feathers, etc.

7. Describe the uses of carbohydrates.

- i. They provide essential nutrients for bacteria in intestinal tract that helps in digestion.
- ii. Dietary fibre helps to keep the bowel functioning properly.
- iii. Fibre helps in lowering of cholesterol level and regulates blood pressure.
- iv. Carbohydrates protect our muscles from cramping.

8. Lactose is disaccharide; which monosaccharides are present in it?

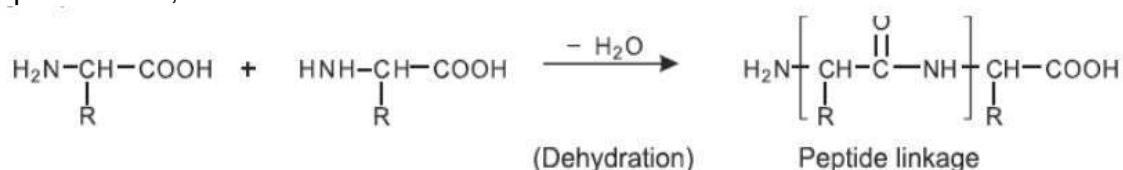
Lactose consisting of glucose and galactose is the main sugar in milk and dairy products.

9. Why are the ten amino acids essential for us?

Ten out of twenty amino acids which cannot be synthesized by our bodies are called essential amino acids. Essential amino acids are required by our bodies and must be supplied through diet.

10. How are proteins formed?

Two amino acids link through peptide linkage. Peptide linkage (bond) is formed by the elimination of water molecule between the amino group of one amino acid and carboxyl acid group of another, such as:



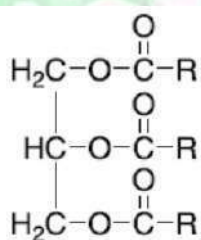
When thousands of amino acids polymerize they form protein

11. How is gelatin obtained?

Proteins are found in bones. When bones are heated they give gelatin. Gelatin is used to make bakery items.

12. Give the general formula of the lipids.

General formula of triglycerides is as under



13. Name two fatty acids with their formulae.



Palmitic acid



Stearic acid

14. Give the types of vitamins.

There are two types of Vitamins:

Fat Soluble Vitamins

Water Soluble Vitamins

15. What is the significance of vitamins?

Each vitamin plays an important role in the healthy development of our body. Vitamins cannot be assimilated without ingesting food. This is why, it is suggested that vitamins must be taken with meal. They help to regulate our body's metabolism.

16. Describe the sources and uses of vitamin A.

Sources

Dairy products, eggs, oils and fats, fish. It can also be obtained from the beta-carotene found in green vegetables, carrots and liver.

Uses

Maintain the health of the epithelium and acts on the retina's dark adaptation mechanism.

17. Justify that water soluble vitamins are not injurious to health.

Water soluble vitamins are rapidly excreted from the body. Hence, these vitamins are not toxic even if taken in large quantity. However, their deficiency causes disease.

18. What do you mean by genetic code of life?

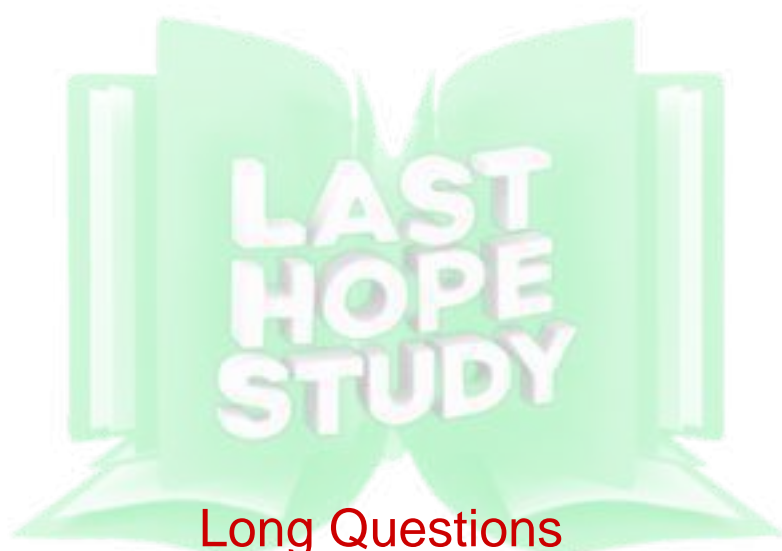
DNA is the permanent storage place for genetic information in the nucleus of a cell. It carries and stores all genetic informations of the cell. It passes these informations as instructions from generation to generation how to synthesize particular proteins from amino acids. These instructions are 'genetic code of life'.

19. What is the function of DNA?

- i. It carries and stores all genetic informations of the cell.
- ii. It passes these informations as instructions from generation to generation how to synthesize particular proteins from amino acids.

20. How do you justify that RNA works like a messenger?

It consists of ribose sugar. It is a single stranded molecule. It is responsible for putting the genetic information to work in the cell to build proteins. Its role is like a messenger.



1. What are carbohydrates? How are monosaccharides prepared? Give their characteristics. Book Pg. No. 102
2. Explain oligosaccharides. Book Pg. No. 102
3. What are polysaccharides? Give their properties. Book Pg. No. 103
4. Explain the sources and uses of proteins. Book Pg. No. 105
5. Explain that amino acids are building blocks of proteins. Book Pg. No. 105
6. Explain the sources and uses of lipids. Book Pg. No. 106
7. Give the importance of vitamins. Book Pg. No. 110
8. Explain the uses and sources of Carbohydrates. Book Pg. No. 103

Chemistry 10

Chapter 14 - Environmental Chemistry 1: The Atmosphere

Exercise - Short Questions



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1. Explain the phenomenon of decreasing temperature in troposphere.

As the concentration of gases decreases gradually with the increase of altitude, correspondingly temperature also decreases at a rate of 6°C per kilometre.

2. Differentiate between primary and secondary air pollutants.

Primary pollutants are the waste or exhaust products driven out because of combustion of fossil fuels and organic matter. These are oxides of sulphur (SO₂ and SO₃); oxides of carbon (CO₂ and CO).

Secondary pollutants are produced by various reactions of primary pollutants. These are sulphuric acid, carbonic acid, nitric acid.

3. State the major sources of CO and CO₂ emission.

- Both of these gases are emitted due to volcanic eruption and decomposition of organic matter naturally.
- Forest fires and burning of wood also emit CO₂ and CO. Especially, when supply of oxygen is limited, emission of CO dominates.

4. CO₂ is responsible for heating up atmosphere, how?

CO₂ is responsible for heating up atmosphere CO₂ traps heat in the atmosphere by letting UV rays in but blocking infrared rays from getting out. And furthermore, burning fossil fuels increases CO₂ levels, trapping more heat. This trapped heat raises the Earth's average temperature, causing global warming.

5. CO is a hidden enemy, explain its action.

CO is a hidden enemy. It is colorless and odorless, making it hard to detect. When inhaled, it binds with hemoglobin more strongly than oxygen, reducing the body's oxygen supply. High levels of CO can cause headaches and fatigue. Prolonged exposure can lead to breathing difficulties and even death. This is why burning fuels in closed spaces is unsafe, and it's important to turn off heaters and stoves before sleeping.

6. What threats are there to human health due to SO₂ gas as air pollutant?

- SO₂ is a colourless gas having irritating smell. It causes suffocation, irritation and severe respiratory problems to asthmatic people.
- SO₂ forms sulphuric acid which damages buildings and vegetations.

7. Which air pollutant is produced on anaerobic decomposition of organic matter?

During anaerobic decomposition of organic matter primary air pollutant, Methane (CH₄) is produced

8. How does acid rain increase the acidity of soil?

Acid rain increases the acidity of the soil. Many crops and plants cannot grow properly in such soil. It also increases the toxic metals in the soil that poison the vegetation. Even old trees are affected due to acidity of soil. Their growth is retarded. They get dry and die.

9. Point out two serious effects of ozone depletion.

- Decreased ozone layer will increase infectious diseases like malaria.
- It can change the life cycle of plants disrupting the food chain.

10. How is ozone layer formed in stratosphere?

Ozone is an allotropic form of oxygen consisting of three oxygen atoms. It is formed in atmosphere by the association of an oxygen atom with an oxygen molecule in the mid of stratosphere.



11. Why does 75% of the atmospheric mass lie within the troposphere?

About 75% of the atmospheric mass is found in the troposphere because this layer is closest to the Earth's surface. Gravity pulls air molecules down, concentrating most of the mass here.

12. How ozone layer is being depleted by chlorofluorocarbons.

These compounds can leak and reach the stratosphere. In the stratosphere, ultraviolet (UV) radiation breaks CFCs apart, releasing reactive chlorine free radicals. These free radicals react with ozone, converting it into oxygen. One chlorine free radical can destroy many ozone molecules. The area where the ozone layer is depleted is known as the ozone hole.





Chemistry 10
Chapter 15 - Water
Exercise - Short Questions

Download All Subjects Notes from website www.lasthopestudy.com

1. How water rises in plants?

Capillary action is the process by which water rises up from the roots of plants to leaves. This process is vital for the survival of the land plants.

2. Which forces are responsible for dissolving polar substances in water?

Hydrogen bonding is responsible for dissolving polar substances in water

3. Why are non-polar compounds insoluble in water?

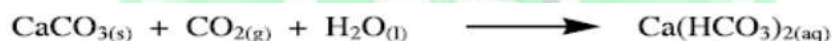
Many covalent substances like benzene, ether, octane, etc., which do not have polar ends or bonds are not attracted by water molecules. Therefore, non-polar compounds do not dissolve in water

4. How does water dissolve sugar and alcohol?

Water molecules are made up of oxygen and hydrogen atoms and can form hydrogen bonds with other water molecules. Each water molecule can connect with four others, creating a tetrahedral arrangement. This unique property allows water to dissolve many polar non-ionic compounds, like sugar and alcohol, by forming hydrogen bonds with them. As a result, substances like sugar and alcohol mix well with water.

5. How does limestone dissolve in water?

limestone is insoluble in water. However, in the presence of carbon dioxide small quantity of limestone is soluble in water according to the following chemical reaction.

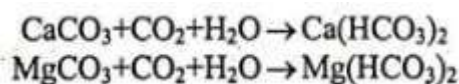


6. Differentiate between soft and hard water.

Soft water	Hard water
i. Soft water is that water which produces good lather with soap	i. Hard water is that water which does not produce lather with soap
ii. It does not have calcium and magnesium ions	ii. It contain calcium and magnesium ions.

7. What are the causes of hardness in water?

Causes of hardness in water. The rain water while coming down absorbs carbon dioxide from the atmosphere. The water mixed with carbon dioxide, when passes through the beds of the soil, converts insoluble carbonates of calcium and magnesium into soluble bicarbonates. It may also dissolve chlorides and sulphates of calcium and magnesium. These salts make the water hard.



8. What are the effects of temporary hardness in water?

- i. Hard water consumes large amount of soap in washing purposes.
- ii. Drinking hard water causes stomach disorders

9. Mention the disadvantages of detergents.

- i. It causes water pollution.
- ii. The detergent remains in the water for a long time and makes the water unfit for aquatic life.
- iii. Phosphate salts in detergents lead to rapid algae growth in water bodies. When these algae die and decay, they consume the oxygen in the water, causing oxygen depletion and ultimately resulting in the death of aquatic life.

10. What is the difference between biodegradable and non-biodegradable substances?

Biodegradable Substances	Non-biodegradable Substances
Definition: The substance which can be decomposed by micro-organisms like bacteria are called bio degradable substances.	Definition: The substances which cannot be decomposed by microorganism like bacteria are called as non-biodegradable substances.
Example: Dead bodies of living organisms like plants and animals.	Example: <ul style="list-style-type: none">• Plastics• Rubber

11. How detergents make the water unfit for aquatic life?

When house hold water containing the detergents is discharged in stream, ponds, lacks and river, it causes water pollution. The detergent remains in the water for a long time and makes the water unfit for aquatic life.

12. Why are pesticides used?

Pesticides are used either directly to kill or control the growth of pests. Pests may be weeds, herbs, insects, fungi, viruses, etc. They all damage crops and transmit diseases both to human beings and animals.

13. What are the reasons of waterborne diseases?

- i. Waterborne infectious diseases are caused by drinking polluted water or eating food prepared with it, often due to toxins or microorganisms.
- ii. Toxins include substances like arsenic, mercury, and lead, while microorganisms include viruses, bacteria, protozoa, and worms.
- iii. The lack of proper sanitation facilities is a major cause of the rapid spread of these diseases.

14. How waterborne diseases can be prevented?

- i. Drinking water must be properly treated and purified.
- ii. There must be adequate sanitary disposal of sewage. Any type of waste must not be thrown or discharged directly in water supplies or reservoirs



Chemistry 10

Chapter 16 - Chemical Industries

Exercise - Short Questions

Download All Subjects Notes from website  www.lasthopestudy.com

1. What role is played by pine oil in the froth flotation process?

Froth flotation process is based on the wetting characteristic of the ore and the gangue particles with oil and water, respectively. The ore particles are preferentially wetted by oil and the gangue particles by water. The whole mixture is agitated with compressed air. Hence, oil coated ore particles being lighter come to the surface in the form of froth that can be skimmed

2. Name the various metallurgical operations.

The processes involved in metallurgy for extraction of a metal in the pure state from its ore are:

- i. concentration of the ore;
- ii. extraction of the metal
- iii. refining of the metal

3. How is roasting carried out?

It is a process of heating the concentrated ore to a high temperature in excess of air. For example; copper pyrite (CuFeS_2) is strongly heated in excess of air to convert it into a mixture of cuprous sulphide and ferrous sulphide ($\text{Cu}_2\text{S} + \text{FeS}$), while impurities react with oxygen to form 2 volatile oxides. Such as



4. Explain process of electrorefining.

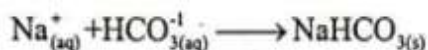
Electro refining is a method used to purify metals, such as copper. In this process, an electrolytic tank is filled with copper sulfate solution. An impure copper electrode acts as the anode, while a pure copper electrode serves as the cathode. When electric current is passed through the solution, the impure copper dissolves and releases Cu^{2+} ions into the solution. These ions gain electrons at the cathode, where they deposit as pure copper. Meanwhile, impurities like gold and silver settle at the bottom as anode mud. This process results in a thick block of pure copper on the cathode.

5. What are the advantages of Solvay's process?

- i. It is a cheap process as raw materials are available at very low prices.
- ii. Carbon dioxide and ammonia are recovered and reused.
- iii. Process is pollution free, because the only waste is calcium chloride solution.
- iv. Sodium carbonate of very high purity is obtained

6. What is the principle of Solvay's process?

Principle of Solvay's process lies in the low solubility of sodium bicarbonate at low temperature i.e. at 15°C . When CO_2 is passed through an ammonical solution of NaCl called ammonical brine only $\text{NaHCO}_3(s)$ precipitates.



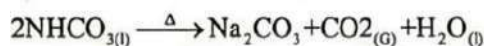
7. What happens when ammonical brine is carbonated?

Ammonical brine is fed into carbonating tower and carbon dioxide is passed through it. Following reactions take place in the carbonating tower. The temperature of the mixture is lowered to 15°C and precipitates of NaHCO_3 are obtained.



8. How NaHCO₃ is converted to Na₂CO₃ ?

Sodium bicarbonate is heated to get sodium carbonate.



9. How is ammonia recovered in the Solvay's process?

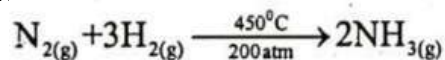
Ammonia recovery tower: Ammonia is recovered in this tower from ammonium chloride solution produced in the carbonated tower and calcium hydroxide formed in lime kiln.



In fact, all ammonia is recovered in this tower and is reused in the process.

10. How is ammonia prepared for the synthesis of urea?

Ammonia is prepared by the "Haber's process". One volume of nitrogen (from air) and three volumes of hydrogen (obtained by passing methane and steam over heated nickel catalyst) is passed over iron catalyst at 450°C and 200 atm pressure.



11. Describe the formation of petroleum.

Petroleum was formed from the decomposition of dead plants and animals buried under the Earth's crust millions of years ago. When these living organisms in the seas died, their bodies sank and were covered by mud and sand. In the absence of air, high pressure, temperature, and bacterial effects caused a decomposition process that took millions of years. Eventually, the remains of these plants and animals transformed into a dark brownish viscous crude oil.

12. What is refining of petroleum and how is it carried out?

Refining process is the separation of crude oil mixture into various useful products (fractions). It is carried out by a process called fractional distillation.

13. Give a use of kerosene oil?

- i. It is used as domestic fuel
- ii. Special grade of it is used as jet fuel.

14. Describe the difference between diesel oil and fuel oil?

Diesel Oil	Fuel Oil
(i) The number of carbon atoms in diesel oil ranges from C ₁₃ to C ₁₅ .	(i) The number of carbon atoms in fuel oil ranges from C ₁₅ to C ₁₈ .
(ii) Its boiling range is 250°C to 350°C	(ii) Its boiling range is 350°C to 400°C.
(iii) It is used as fuel for buses, trucks, railway engines, ships etc.	(ii) It is used in industries to heat boilers and furnace.

15. Write down the names of four fractions obtained by the fractional distillation of residual oil?

The four fractions of residual oil are:

- i. Lubricants;
- ii. Paraffin wax;
- iii. Asphalt and petroleum coke

16. What is the difference between crude oil and residual oil?

Crude Oil	Residual Oil
The remains of dead plants and animals were converted into dark brownish viscous crude oil	Residual oil is the refined form of crude oil that does not vaporized under these condition is collected and heated above 400 C for further fractional distillation.

17. Which petroleum fraction is used in dry cleaning?

Gasoline is used in dry cleaning.



It is Challenge that You can get 12/12 marks in Board Paper (100 % Guranteed)

Q1. Tick for correct answer.

1X252=252

چار ممکنہ جوابات میں سے درست پر دائرہ لگائیں۔

1. In the lime kiln, the reaction $CaCO_3(s) \rightarrow CaC(s) + CO_2(g) \uparrow$ goes to completion because: .1
 $CaCO_3(s) \rightarrow CaC(s) + CO_2(g) \uparrow$ چلنے کی بجلی میں درج ذیل ری ایکشن مکمل ہونے کی وجہ سے:

(A) High temperature زیادہ لہیرچ	(B) $CaCO_3$ is more stable than CaO کا زیادہ مستحکم CaO کی نسبت $CaCO_3$ ہوتا	(C) Constant release of CO_2 کا مسلسل خارج ہوتا CO_2	(D) CaO is not dissociated کا نہ ٹوٹا CaO
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2. In a chemical reaction, the substances which react together are called: .2
 ایک کیمیکل ری ایکشن میں جو اشیا آپس میں ری ایکٹ کرتی ہیں، وہ کہلاتی ہیں:

(A) Reactants ری ایکٹنٹس	(B) Products پروڈکٹس	(C) Equilibrium ایکو لبریم	(D) Numerator نمبر
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3. When a system is in equilibrium, then: .3
 جب ایک سسٹم ایکو لبریم کی حالت میں ہوتا ہے تو:

(A) Concentration of reactants and products becomes equal ری ایکٹنٹس اور پروڈکٹس کی کنسنٹریشن برابر ہو جاتی ہے	(B) The opposing reactions stop متخالف ری ایکشنز (فارورڈ اور ریورس) رک جاتے ہیں	(C) The rate of reverse reaction is very slow ریورس ری ایکشن کا ریٹ بہت کم ہو جاتا ہے	(D) The rate of forward and reverse reaction becomes equal فارورڈ اور ریورس ری ایکشنز کا ریٹ برابر ہو جاتا ہے
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4. In dynamic equilibrium: .4
 ڈائنامک ایکو لبریم کی حالت میں:

(A) The reaction stops to proceed ری ایکشن آگے بڑھنے سے رک جاتا ہے	(B) The quantities of reactants and products becomes equal ری ایکٹنٹس اور پروڈکٹس کی مقداریں برابر ہوتی ہیں	(C) The rate of forward and reverse reaction becomes equal فارورڈ اور ریورس ری ایکشن کا ریٹ برابر ہوتا ہے	(D) The reaction can no longer be reversed ری ایکشن مزید ریورس نہیں ہوتا
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5. In an irreversible reaction, dynamic equilibrium: .5
 اور ریورسیبل ری ایکشن میں ڈائنامک ایکو لبریم:

(A) Never establishes بھی قائم نہیں ہوتا	(B) Establishes before the completion of reaction ری ایکشن مکمل ہونے سے پہلے قائم ہو جاتا ہے	(C) Establishes after the completion of reaction ری ایکشن مکمل ہونے کے بعد قائم ہوتا ہے	(D) Establishes readily بہت جلد قائم ہو جاتا ہے
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6. Plants use: .6
 پودے استعمال کرتے ہیں:

(A) Carbon dioxide کاربن ڈائی آکسائیڈ	(B) Oxygen آکسیجن	(C) Nitrogen نائٹروجن	(D) Sulphur سلفر
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7. The color of iodine is: .7
 آئیوڈین کا رنگ ہوتا ہے:

(A) Black کالا	(B) Yellow پیلا	(C) Purple جامنی	(D) Green ہبز
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8. At equilibrium state, there are possibilities: .8
 ایکو لبریم کی حالت میں کتنی حالتیں ممکن ہو سکتی ہیں؟

(A) Two دو	(B) Three تین	(C) Four چار	(D) Five پانچ
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9. The color of HI is: 9. HI کا رنگ ہے:

(A) Orange اورنج	(B) Purple پورپل	(C) Red سرخ	(D) Colourless بے رنگ
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10. The substances which are formed during a chemical reaction are called: 10. ایسی اشیاء جو کیمیکل ری ایکشن کے دوران بنتی ہیں:

(A) Products پروڈکٹس	(B) Reactants ری ایکٹنٹس	(C) Radicals ریڈیکلز	(D) Elements ایلیمنٹس
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11. Reversible reaction is represented by: 11. ریورسبل ری ایکشن کو ظاہر کیا جاتا ہے:

(A) \rightarrow	(B) \leftrightarrow	(C) \rightleftharpoons	(D) \rightleftharpoons
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12. In the beginning, the rate of reverse reaction is: 12. شروع میں ریورس ری ایکشن کی شرح ہوتی ہے:

(A) Less کم	(B) Moderate درمیانہ	(C) Very fast بہت تیز	(D) Slow آہستہ
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13. Reverse reaction is: 13. ریورس ری ایکشن دو ہے:

(A) Which takes place from left to right جو بائیں سے دائیں جانب واقع ہوتا ہے	(B) In which reactants react to form products جس میں ری ایکٹنٹس ری ایکٹ کر کے پروڈکٹس بناتے ہیں	(C) Which gradually slow down جو بتدریج آہستہ ہوتا ہے	(D) Which gradually speeds up جو بتدریج تیز ہوتا ہے
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Last Hope Study

14. What will be present in the equilibrium mixture? $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$ $K_c = 2.86 \text{ mol}^{-2} \text{ dm}^6$ 14.

$K_c = 2.86 \text{ mol}^{-2} \text{ dm}^6$ $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$ انکی لیبریم کچھ میں کیا کیا موجود ہوگا؟

(A) Only NH_3 صرف NH_3	(B) NH_3 and H_2 , N_2 NH_3 اور H_2 , N_2	(C) H_2 and N_2 only صرف H_2 اور N_2	(D) Only H_2 صرف H_2
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15. Molar concentration is represented by: 15. مولر کنسنٹریشن کو ظاہر کیا جاتا ہے:

(A) { }	(B) []	(C) ()	(D) All
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16. Guldberg and Waage put law of mass action in: 16. لاء آفس اس ایکشن گلدبرگ اور ویک نے پیش کیا:

(A) 1859	(B) 1869	(C) 1879	(D) 1889
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17. Who presented law of mass action? 17. لاء آفس اس ایکشن کس نے پیش کیا؟

(A) Dalton ڈالٹن	(B) Guldberg گلدبرگ	(C) Rutherford رورڈرفڈ	(D) Mosely موزلی
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18. The units for molar concentration are: 18. مولر کنسنٹریشن کے یونٹس ہیں:

(A) $\text{mol}^{-1} \text{ dm}^{-3}$	(B) $\text{mol}^{-1} \text{ dm}^3$	(C) mol dm^3	(D) mol dm^{-3}
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19. The specific rate constant of forward reaction is represented by: 19. فارورڈ ری ایکشن کے مخصوص ریٹ کونسٹنٹ کو ظاہر کیا جاتا ہے:

(A) k_f	(B) k_c	(C) k_r	(D) k_b
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20. K_c is equal to: 20. K_c برابر ہے:

(A) $\frac{k_f}{k_r}$	(B) $\frac{k_r}{k_f}$	(C) $\frac{K_f}{k_f}$	(D) $\frac{K_c}{k_c}$
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21. The value of K_c in equilibrium state is: 21. انکی لیبریم کی حالت میں K_c کی ویلیو ہوتی ہے:

(A) $\frac{K_f}{K_r}$	(B) $\frac{k_f}{k_r}$	(C) $\frac{K_r}{R_f}$	(D) $\frac{R_f}{R_r}$
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22. For reaction $2A + B \rightleftharpoons 3C$: equilibrium constant can be represented as: 22.

ایک تعامل $2A + B \rightleftharpoons 3C$ کے لیے انکی لیبریم کے کونسٹنٹ کو اس طرح ظاہر کر سکتے ہیں:

(A) $\frac{[2A][B]}{[3C]}$	(B) $\frac{[A]^2[B]}{[C]^3}$	(C) $\frac{[3C]}{[2A][B]}$	(D) $\frac{[C]^3}{[A]^2[B]}$
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23. The equilibrium constant expression for equation $H_{2(g)} + I_{2(g)} = 2HI_{(g)}$ is: .23

مسائل $H_{2(g)} + I_{2(g)} = 2HI_{(g)}$ کے لیے ایکوی لبریم کونسٹنٹ ایکسپریشن ہے:

(A) $K_c = \frac{[HI]^2}{[H_2][I_2]}$	(B) $K_c = \frac{[H_2][I_2]}{[HI]^2}$	(C) $K_c = \frac{[HI]^2}{[H]^2[I_2]}$	(D) $K_c = \frac{[H]^2[I]^2}{[HI]^2}$
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24. Which of the following equilibrium expression is correct for the following reaction? $N_{2(g)} + 3H_{2(g)} = 2NH_{3(g)}$.24

درج ذیل ری ایکشن کے لیے کون سی ایکوی لبریم کونسٹنٹ ایکسپریشن درست ہے؟ $N_{2(g)} + 3H_{2(g)} = 2NH_{3(g)}$

(A) $\frac{[2NH_3]}{[N_2][2H_2]}$	(B) $\frac{[N_2][2H_2]}{[2NH_3]}$	(C) $\frac{[NH_3]^2}{[N_2][H_2]^3}$	(D) $\frac{[N_2][H_2]^3}{[NH_3]^2}$
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25. Which of the following equilibrium expression is correct for the following reaction? $H_{2(g)} + I_{2(g)} = 2HI_{(g)}$.25

درج ذیل ری ایکشن کے لیے کون سی ایکوی لبریم کونسٹنٹ ایکسپریشن درست ہے؟ $H_{2(g)} + I_{2(g)} = 2HI_{(g)}$

(A) $K_c = \frac{[H_2][I_2]}{[2HI]}$	(B) $K_c = \frac{[2HI]}{[H_2][I_2]}$	(C) $K_c = \frac{[HI]^2}{[H_2][I_2]}$	(D) $K_c = \frac{[H]^2[I]^2}{[HI]^2}$
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26. The value of K_c depends upon: .26

(A) Temperature <small>تہرج پر</small>	(B) Initial concentration <small>ابتدائی کونسنٹریشن پر</small>	(C) Both <small>دونوں</small>	(D) None of the above <small>ان میں سے کوئی نہیں</small>
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27. In a reaction, when the number of moles at both sides is equal then the unit of K_c will be: .27

ایک ری ایکشن میں جب دونوں طرف مولز کی تعداد برابر ہو تو K_c کا یونٹ ہوگا:

(A) No unit	(B) $mol^{-2}dm^6$	(C) $mol dm^3$	(D) $mol^{-2}dm$
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28. In balanced equation $N_{2(g)} + 3H_{2(g)} = 2NH_{3(g)}$ the units of equilibrium constant are: .28

توازن مساوات $N_{2(g)} + 3H_{2(g)} = 2NH_{3(g)}$ میں ایکوی لبریم کونسٹنٹ کے یونٹس ہیں:

(A) $mol^{-2}dm^6$	(B) $mol^{-1}dm^{-3}$	(C) $mol dm^{-3}$	(D) None
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29. The K_c units for the following reaction will be: $H_{2(g)} + I_{2(g)} = 2HI_{(g)}$.29

درج ذیل ری ایکشن کے لیے K_c کے یونٹس ہوں گے: $H_{2(g)} + I_{2(g)} = 2HI_{(g)}$

(A) $mol dm^{-3}$	(B) $mol^{-1}dm^{-3}$	(C) None	(D) $mol dm^3$
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30. For a reaction between PCl_3 and Cl_2 to form PCl_5 , the units of K_c are: .30

PCl_3 اور Cl_2 سے PCl_5 بنانے کے لیے ری ایکشن میں K_c کے یونٹس ہیں:

(A) $mol dm^{-3}$	(B) $mol^{-1}dm^{-3}$	(C) $mol^{-1}dm^3$	(D) $mol dm^3$
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31. When the value of K_c is very small, it represents: .31

جب K_c کی ویلیو بہت کم ہو تو ظاہر کرتی ہے:

(A) Equilibrium will never establish <small>ایکوی لبریم بھی قائم نہیں ہو گا</small>	(B) All reactants will convert into products <small>تمام ری ایکٹنٹس پروڈکٹس میں تبدیل ہو جائیں گے</small>	(C) Reaction will go to completion <small>ری ایکشن مکمل ہو جائے گا</small>	(D) The number of products is negligible <small>پروڈکٹس کی مقدار بہت کم ہو گی</small>
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32. Reaction will be in equilibrium if: .32

ری ایکشن ایکوی لبریم کی حالت میں ہوگا اگر:

(A) $Q_c > K_c$	(B) $Q_c < K_c$	(C) $Q_c = K_c$	(D) $Q_c = 0$
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33. The large value of K_c indicates that the reaction will be: .33

K_c کی بڑی عددی ویلیو ظاہر کرتی ہے کہ ری ایکشن ہوگا:

(A) In equilibrium <small>ایکوی لبریم میں</small>	(B) Completed <small>مکمل ہوا</small>	(C) Proceed in the forward direction <small>آگے کی طرف جائے گا</small>	(D) Proceed in the reverse direction <small>پچھے کی طرف جائے گا</small>
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34. If $Q_c < K_c$ then reaction proceed: 34. اگر $Q_c < K_c$ دی ایکشن بڑھتا ہے:

(A) Forward direction آگے کی طرف	(B) Reverse direction پچھے کی طرف	(C) Equilibrium ایکوئی لبریم میں	(D) In both directions دونوں طرف
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35. Reaction will proceed from left to right if: 35. دی ایکشن بائیں سے دائیں جائے گا اگر:

(A) $Q_c = K_c$	(B) $Q_c > K_c$	(C) $Q_c < K_c$	(D) $Q_c = 0$
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36. If $Q_c = K_c$ then reaction will proceed: 36. اگر $Q_c = K_c$ ہو تو ری ایکشن جائے گا:

(A) Forward آگے	(B) Reverse پچھے	(C) In equilibrium state ایکوئی لبریم کی حالت میں	(D) None of the above کچھ بھی نہیں
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37. In reaction $N_2O_4 = 2NO_2$, the value of K_c will be: 37. $N_2O_4 = 2NO_2$ دی ایکشن میں K_c کی ویلیو ہے:

(A) 0.213	(B) 0.214	(C) 0.211	(D) 0.212
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38. In a reversible reaction if $Q_c = K_c$ then we can conclude that: 38. ایک ریورسیبل دی ایکشن میں $Q_c = K_c$ اگر تو ہم نتیجہ اخذ کر سکتے ہیں کہ:

(A) Reaction is occurring in forward direction دی ایکشن آگے کی طرف جا رہا ہے	(B) Reaction is occurring in reverse direction دی ایکشن پچھے کی طرف جا رہا ہے	(C) Equilibrium has been attained ایکوئی لبریم حاصل ہو چکا ہے	(D) Reaction is not at equilibrium ایکوئی لبریم نہیں ہے
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39. For which reaction, k_f is rate constant? 39. کس ری ایکشن کے لیے k_f ریٹ کونسٹنٹ ہے؟

(A) Forward reaction قادر ری ایکشن	(B) Reverse reaction ریورس ری ایکشن	(C) Upward reaction اپ ورڈ ری ایکشن	(D) Downward reaction ڈاؤن ورڈ ری ایکشن
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40. If $Q_c > K_c$ then reaction will be: 40. اگر $Q_c > K_c$ ہو تو ری ایکشن ہوگا:

(A) Static equilibrium سٹیک ایکوئی لبریم	(B) Chemical equilibrium کیمیکل ایکوئی لبریم	(C) In the forward direction آگے کی سمت	(D) In the reverse direction پچھے کی طرف
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41. When the value of K_c is very large, it indicates: 41. جب K_c کی ویلیو بہت زیادہ ہو تو یہ ظاہر کرتی ہے:

(A) Reaction mixture almost consists of all products دی ایکشن کیمچر تقریباً پروڈکٹس پر مشتمل ہے	(B) Reaction mixture almost consists of all reactants دی ایکشن کیمچر میں تقریباً تمام ری ایکٹنٹس ہی پائے جاتے ہیں	(C) Reaction has not gone to completion دی ایکشن ابھی عمل نہیں ہوا ہے	(D) Reaction mixture has negligible products دی ایکشن کیمچر میں بہت کم پروڈکٹس موجود ہیں
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42. The conjugate acid of base H_2O is: 42. H_2O کا کنجوگٹ ایسڈ ہے:

(A) H^+	(B) H_2	(C) H_3O^+	(D) O^{2-}
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43. The meaning of Latin word "acidus" is: 43. لاطینی زبان میں ایڈس کا مطلب ہے:

(A) Sweet مٹھا	(B) Tasteless بے ذائقہ	(C) Salty تمکین	(D) Sour کٹھا
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44. is not mineral acid: 44. مزل ایسڈ نہیں ہے:

(A) HCl	(B) CH_3COOH	(C) H_2SO_4	(D) NaOH
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45. Acids reacting with metal sulphides, liberate gas: 45. ایسڈز مٹل سلفائیڈز سے ری ایکٹ کر کے جو گیس خارج کرتے ہیں:

(A) Oxygen آکسیجن	(B) Hydrogen ہائیڈروجن	(C) Hydrogen sulphide ہائیڈروجن سلفائیڈ	(D) Hydrogen oxide ہائیڈروجن آکسائیڈ
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46. When bases react with acids, they form salt and: 46. بیسز ایسڈز کے ساتھ ری ایکٹ کرتے ہیں تو بناتے ہیں نمک اور:

(A) Oxygen gas آکسیجن گیس	(B) Hydrogen gas ہائیڈروجن گیس	<input checked="" type="radio"/> (C) Water پانی	(D) Carbon dioxide کاربن ڈائی آکسائیڈ
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47. Which of the following is not an acid? 47. درج ذیل میں سے کون سا تیزاب نہیں ہے؟

(A) $AlCl_3$	(B) BF_3	<input checked="" type="radio"/> (C) NH_3	(D) H^+
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48. The natural source of citric acid is: 48. شکرک ایسڈ کا قدرتی ذریعہ ہے:

(A) Rancid butter ہاسی کھسن	(B) Fats چربی	<input checked="" type="radio"/> (C) Lemon لیموں	(D) Sour milk پنا دودھ
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49. Rancid butter has a foul smell because of: 49. ہاسی کھسن سے آنے والی گندی بو کی وجہ ہے:

(A) Butanoic acid بیوٹانک	(B) Nitric acid نائٹریک	(C) Tartaric acid تارتاریک	(D) Sulphuric acid سلفیورک
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50. According to Arrhenius concept, base is a species which: 50. آریہنیس کے نظریے کے مطابق میں دو ہے جو:

(A) Gives H^+ ion in aqueous solution ایکونس سلوشن میں H^+ آئن دیتی ہے	<input checked="" type="radio"/> (B) Gives OH^- ion in aqueous solution ایکونس سلوشن میں OH^- آئن دیتی ہے	(C) Which can donate a proton to other specie جو کسی دوسری شے کو پروٹون دے سکتی ہے	(D) Which can accept a proton from other specie جو کسی دوسری شے سے پروٹون قبول کر سکتی ہے
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Last Hope Study

51. is a lewis base: 51. ایک لیویس بیس ہے:

(A) $AlCl_3$	(B) H^+	(C) BF_3	<input checked="" type="radio"/> (D) NH_3
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52. In strong acidic solution the color of litmus becomes: 52. طاقتور ایسڈک سلوشن میں لٹمس کا رنگ ہو جاتا ہے:

<input checked="" type="radio"/> (A) Red سرخ	(B) Blue نیلا	(C) Yellow پیلا	(D) Colorless بے رنگ
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53. Uric acid is found in: 53. یورک ایسڈ پایا جاتا ہے:

<input checked="" type="radio"/> (A) Urine پیشاب	(B) Fats فینس	(C) Apple سیب	(D) Grapes انجر
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54. Which of the following is used for the preparation of soap? 54. درج ذیل میں سے کسے صابن کی تیاری میں استعمال کیا جاتا ہے؟

(A) $Pb(NO_3)_2$	(B) $ZnCl_2$	<input checked="" type="radio"/> (C) $NaOH$	(D) $Fe(OH)_2$
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55. The taste of acid is: 55. ایسڈ کا ذائقہ ہوتا ہے:

(A) Bitter کڑوا	(B) Sweet میٹھا	<input checked="" type="radio"/> (C) Sour ترش	(D) Salty کھین
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56. The taste of base is: 56. بیس کا ذائقہ ہوتا ہے:

<input checked="" type="radio"/> (A) Bitter کڑوا	(B) Sweet میٹھا	(C) Sour ترش	(D) Salty کھین
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57. is not an acid: 57. تیزاب نہیں ہے:

(A) HCl	<input checked="" type="radio"/> (B) NH_3	(C) H_2CO_3	(D) H_2SO_4
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58. The acid which is the king of chemicals is: 58. وہ تیزاب جو کیمیکلز کا بادشاہ ہے:

<input checked="" type="radio"/> (A) Sulphuric acid سلفیورک	(B) Nitric acid نائٹریک	(C) Hydrochloric acid ہائیڈروکلورک	(D) Acetic acid ایسٹک
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59. Which base is more corrosive? 59. کونسا بیس زیادہ کروسیو ہے؟

<input checked="" type="radio"/> (A) NH_4OH	(B) $NaOH$	(C) $Ca(OH)_2$	(D) $Al(OH)_3$
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60. Arrhenius presented the concept of acid and base in: 60. آریہنیس نے ایسڈ اور بیس کا نظریہ پیش کیا:

<input checked="" type="radio"/> (A) 1787	(B) 1788	(C) 1789	(D) 1790
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61. The conjugate base of HCl acid is: 61. HCl ایسڈ کا جوگیٹ بیس ہے:

(A) H^+	(B) OH^-	<input checked="" type="radio"/> (C) Cl^-	(D) NH_4^+
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62. The conjugate base of H_3O^+ is: 62. H_3O^+ کا کنجوگٹ میں ہوتا ہے:

<input checked="" type="radio"/> (A) H_2O	(B) OH^-	(C) H_3O^+	(D) H_3O^-
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63. The acid used in lead storage batteries as electrolyte is: 63. لیڈ سٹوریج بیٹری میں بطور الیکٹرو لائٹ استعمال ہونے والا تیزاب ہے:

<input checked="" type="radio"/> (A) Sulphuric acid	(B) Uric acid	(C) Formic acid	(D) Citric acid
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64. Which acid is used for the preservation of food? 64. خوراک کو محفوظ کرنے کے لیے کون سا ایڈ اسٹیمال کیا جاتا ہے؟

(A) Sulphuric acid	(B) Nitric acid	(C) Hydrochloric acid	<input checked="" type="radio"/> (D) Benzoic acid
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65. The base which is used in alkaline battery: 65. الکلائن بیٹری میں جو میں استعمال ہوتی ہے:

(A) NaOH	(B) $Al(OH)_3$	<input checked="" type="radio"/> (C) KOH	(D) $Mg(OH)_2$
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66. If $K_w = [H^+][OH^-] = 1.0 \times 10^{-14}$ at $25^\circ C$. What is the concentration of H^+ in pure water at $25^\circ C$? 66. $25^\circ C$ پر $K_w = [H^+][OH^-] = 1.0 \times 10^{-14}$ خاص پانی میں H^+ کی کنسنٹریشن کیا ہوگی؟

<input checked="" type="radio"/> (A) $1 \times 10^{-7} \text{ moldm}^{-3}$	(B) $1 \times 10^7 \text{ moldm}^{-3}$	(C) $1 \times 10^{-14} \text{ moldm}^{-3}$	(D) $1 \times 10^{14} \text{ moldm}^{-3}$
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67. The first acid known to man was: 67. سب سے پہلے دریافت ہونے والا ایڈ تھا:

(A) Benzoic acid	(B) Acetic acid	<input checked="" type="radio"/> (C) Sulphuric acid	(D) Nitric acid
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68. Lactic acid is found in: 68. لیکٹک ایڈ پایا جاتا ہے:

<input checked="" type="radio"/> (A) Sour milk	(B) Apple	(C) Grapes	(D) Lemon
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69. Bronsted-Lowry presented the concept of acids and bases in: 69. لوری اور برنستول نے ایڈ اور بیسز کی تصور پرکھ پیش کیس؟

(A) 1787	(B) 1823	<input checked="" type="radio"/> (C) 1923	(D) 1943
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70. The acid present in sour milk is: 70. پھلے ہوئے دودھ میں پایا جانے والا ایڈ ہے:

<input checked="" type="radio"/> (A) Lactic acid	(B) Formic acid	(C) Tartaric acid	(D) Uric acid
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71. Dilute acid reacts with carbonates to produce the given product except: 71. ہلکا تیزاب کاربونیٹس کے ساتھ ری ایکٹ کر کے پراڈکٹ بناتا ہے سوائے:

(A) Salt	(B) Water	(C) Carbon dioxide	<input checked="" type="radio"/> (D) Hydrogen
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72. Citric acid is found in: 72. سٹرک ایڈ پایا جاتا ہے:

(A) Urine	(B) Fat	<input checked="" type="radio"/> (C) Lemon	(D) Sour milk
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73. The binary compounds of oxygen such as carbon dioxide and sulphur dioxide were named as acids by: 73. آکسیجن کے بائنری کمپاؤنڈ جیسا کہ کاربن ڈائی آکسائیڈ اور سلفر ڈائی آکسائیڈ کو ایڈز کا نام دیا:

(A) Jabir bin Hayan	<input checked="" type="radio"/> (B) Lavoisier	(C) Al Jahiz	(D) Hamphrydey
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74. Word acid came from: 74. لفظ ایڈ ماخوذ ہے:

(A) Greek	(B) Italian	(C) Indian	<input checked="" type="radio"/> (D) Latin
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75. Malic acid is found in: 75. مالک ایڈ پایا جاتا ہے:

(A) Urine	(B) Fat	<input checked="" type="radio"/> (C) Apple	(D) Butter
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76. Butyric acid is found in: 76. بیوٹرک ایڈ پایا جاتا ہے:

(A) Apple	(B) Fats	(C) Grapes	<input checked="" type="radio"/> (D) Rancid butter
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77. Bases on reaction with ammonium salt release: 77. بیسز امونیئم سالتس کے ساتھ ری ایکٹ کر کے خارج کرتی ہیں:

(A) Nitrogen gas نائٹروجن گیس	(B) Hydrogen gas ہائیڈروجن گیس	(C) Sulphur dioxide gas سلفر ڈائی آکسائیڈ گیس	(D) Ammonia gas امونیا گیس
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78. In strong basic solution the color of litmus turns into: 78. طاقتور بیسک سلوشن میں لٹمس کا رنگ ہو جاتا ہے:

(A) Yellow پیلا	(B) Blue نیلا	(C) Red سرخ	(D) Colorless بے رنگ
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79. Which chemical is used for removing grease from clothes? 79. کپڑوں سے گریس کے داغ نکالنے کے لیے کون سا کیمیکل استعمال کیا جاتا ہے؟

(A) Ammonium nitrate امونیم نائٹریٹ	(B) Aluminium hydroxide الیومینیم ہائیڈرو آکسائیڈ	(C) Ammonium hydroxide امونیم ہائیڈرو آکسائیڈ	(D) Aluminium chloride الیومینیم کلورائیڈ
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80. The formula of citric acid is: 80. سٹرک ایسڈ کا فارمولہ ہے:

(A) $C_{14}H_{31}COOH$	(B) $C_{15}H_{31}COOH$	(C) $C_{16}H_{31}COOH$	(D) $C_{17}H_{35}COOH$
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81. Which one of the following is Lavoisier acid? 81. کون سا ایسڈ لوائیئر ہے؟

(A) CO_2	(B) H_2SO_4	(C) HCl	(D) NH_3
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82. Which base is used to neutralize acidity in the stomach? 82. معدے کی ایسڈیٹیٹی ختم کرنے کے لیے کون سا بیس استعمال کیا جاتا ہے؟

(A) $Ca(OH)_2$	(B) NaOH	(C) $Mg(OH)_2$	(D) KOH
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83. Acid used for flavouring of food is: 83. خوراک کو خوش ذائقہ بنانے کے لیے کون سا ایسڈ استعمال کیا جاتا ہے؟

(A) Benzoic acid بینزوائک ایسڈ	(B) Acetic acid ایسیٹک ایسڈ	(C) Sulphuric acid سلفیورک ایسڈ	(D) Nitric acid نائٹریک ایسڈ
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84. Which compound is amphoteric? 84. کون سا مرکب امفوٹیریٹک ہے؟

(A) H_2O	(B) NH_3	(C) HCl	(D) CH_3COOH
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85. The pH of acid rain is: 85. تیزابی بارش کی pH ہے:

(A) 4	(B) 5	(C) 6.5	(D) 2
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86. The pOH of 0.001M solution of KOH is: 86. KOH کے 0.001M سلوشن کی pOH ہے:

(A) 3	(B) 11	(C) 2	(D) 4
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87. The sum of pH and pOH is always: 87. pH اور pOH کا مجموعہ ہمیشہ برابر ہوتا ہے:

(A) 1	(B) 0	(C) 7	(D) 14
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88. Which is common indicator? 88. کون سی چیز عام انڈیکیٹر ہے؟

(A) Methyl orange میتھائل اورنج	(B) Litmus paper لٹمس پیپر	(C) pH paper pH پیپر	(D) None of the above کوئی نہیں
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89. The sum of pH and pOH at 25°C is always: 89. 25°C پر pH اور pOH کا مجموعہ ہمیشہ برابر ہوتا ہے:

(A) 4	(B) 8	(C) 10	(D) 14
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90. The pH of neutral solution is: 90. نیوٹرل سلوشن کی pH ہے:

(A) 6	(B) 7	(C) 8	(D) 12
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91. The pH value of a neutral solution is always: 91. نیوٹرل سلوشن کی pH کی قیمت ہمیشہ ہوتی ہے:

(A) Greater than seven سات سے زیادہ	(B) Less than seven سات سے کم	(C) Equal to seven سات کے برابر	(D) Zero صفر
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92. Values of pH and pOH are: 92. pH اور pOH کی قیمتیں ہوتی ہیں:

(A) 0 to 10 0 to 10	(B) 0 to 14 0 to 14	(C) 1 to 13 1 to 13	(D) 1 to 16 1 to 16
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93. When alkalis react with ammonium salts which gas is liberated? 93. جب الکیلز امونیم سالٹس سے ری ایکٹ کرتے ہیں تو کونسی گیس خارج ہوتی ہے؟

(A) O ₂	(B) CO ₂	(C) H ₂	<input checked="" type="radio"/> (D) NH ₃
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94. Which of the following is an example of complex salt? 94. درج ذیل میں سے کون سی کمپلیکس سالت کی مثال ہے؟

(A) Zinc sulphate زینک سلفیٹ	(B) Potash alum پوٹاش الوم	<input checked="" type="radio"/> (C) Potassium ferrocyanids پوٹاشیم فیروسیانائیڈ	(D) Sodium phosphate سوڈیم فاسفیٹ
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95. Potassium ferrocyanids K₄[Fe(CN)₆] is: 95. پوٹاشیم فیروسیانائیڈ K₄[Fe(CN)₆] ہے:

(A) Normal salt نارمل سالت	(B) Mixed salt گھڑ سالت	<input checked="" type="radio"/> (C) Complex salt کمپلیکس سالت	(D) Double salt ڈبل سالت
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96. Ca(OCl)Cl is an example of: 96. Ca(OCl)Cl کی مثال ہے:

(A) Complex salt کمپلیکس سالت	(B) Double salt ڈبل سالت	(C) Normal salt نارمل سالت	<input checked="" type="radio"/> (D) Mixed salt گھڑ سالت
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97. Which of the following is acidic salt? 97. ان میں سے کون سا ایسڈک سالت ہے؟

<input checked="" type="radio"/> (A) KHSO ₄	(B) Al(OH) ₂ Cl	(C) NaCl	(D) Ca(OCl)Cl
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98. Salt formed with the reaction of HCl and KOH is: 98. HCl اور KOH کو ملانے سے جو سالت بنتی ہے وہ ہے:

(A) Acidic ایسڈک	(B) Basic بیسیک	<input checked="" type="radio"/> (C) Neutral نیوٹرل	(D) Complex کمپلیکس
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99. Which of the following is not present in mixed salts? 99. درج ذیل میں سے کون سا گھڑ سالت میں نہیں ہوتا؟

(A) K ₄ [Fe(CN) ₆]	(B) Ca(OCl)Cl	(C) K ₂ SO ₄ ·Al ₂ (SO ₄) ₃ ·24H ₂ O	<input checked="" type="radio"/> (D) NH ₄ NO ₃
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100. Which of the following is used as fertilizer? 100. درج ذیل میں سے کس کو بطور فرٹیلائزر استعمال کیا جاتا ہے؟

(A) Gypsum جبس	<input checked="" type="radio"/> (B) Potassium nitrate پوٹاشیم نائٹریٹ	(C) Sodium carbonate سوڈیم کاربونیٹ	(D) Both a and b
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101. Bleaching powder is an example of: 101. پلپرنگ پاورڈر کی مثال ہے:

<input checked="" type="radio"/> (A) Mixed salt گھڑ سالت	(B) Acidic salt ایسڈک سالت	(C) Double salt ڈبل سالت	(D) None کوئی نہیں
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102. KCl is an example of: 102. KCl کی مثال ہے:

(A) Double salt ڈبل سالت	<input checked="" type="radio"/> (B) Normal salt نارمل سالت	(C) Mixed salt گھڑ سالت	(D) Complex salt کمپلیکس سالت
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103. Which of the following is double salt? 103. کون سا ڈبل سالت ہے؟

(A) NaCl	(B) CaO	(C) AlCl ₃	<input checked="" type="radio"/> (D) K ₂ SO ₄ ·Al ₂ (SO ₄) ₃ ·24H ₂ O
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104. Who prepared the first organic compound urea? 104. پہلا آرگینک کمپاؤنڈ یوریا کس نے تیار کیا؟

<input checked="" type="radio"/> (A) Wohler وہلر	(B) Arrhenius آرنیئس نے	(C) Dalton ڈالٹن	(D) Jabir bin Hayan جابر بن حیان
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105. The branch of chemistry which deals with hydrocarbons and their derivatives is called: 105. کیمسٹری کی وہ شاخ جو ہائڈروکاربوز اور ان کے فیوڈز کا مطالعہ کرتی ہے کہلاتی ہے:

(A) Inorganic chemistry ان آرگینک کیمسٹری	<input checked="" type="radio"/> (B) Organic chemistry آرگینک کیمسٹری	(C) Physical chemistry فزیکل کیمسٹری	(D) Analytical chemistry اینالٹیکل کیمسٹری
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106. The bond energy of C - C bond is: 106. C-C بانڈ کی طاقت ہے:

(A) 255 kJmol ⁻¹	<input checked="" type="radio"/> (B) 355 kJmol ⁻¹	(C) 455 kJmol ⁻¹	(D) 555 kJmol ⁻¹
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107. Carbon is: 107. کاربن ہوتی ہے:

(A) A metal ایک دھات	<input checked="" type="radio"/> (B) A non-metal ایک غیر دھات	(C) Metalloid دھات نما	(D) Compound مرکب
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108. The example of heterocyclic compound is: 108. ہیزروسیکلک کمپاؤنڈ کی مثال ہے:

(A) Benzene بینزین	(B) Hexane ہیکسین	(C) Cyclohexane سائیکلوہیکسین	<input checked="" type="radio"/> (D) Pyridine پائیرین
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109. The chemical formula of urea is: 109. یوریا کا کیمیکل فارمولا ہے:

(A) NH_4CNO	(B) NH_4CN	(C) NH_2CONH_2	(D) NH_4Cl
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110. Percentage of methane present in natural gas is: 110. قدرتی گیس کا کتنے فیصد میتھین پر مشتمل ہوتا ہے:

(A) 75%	(B) 80%	(C) 85%	(D) 90%
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111. The amount of carbon in peat is: 111. پیت میں کاربن کی مقدار ہوتی ہے:

(A) 60%	(B) 70%	(C) 85%	(D) 90%
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112. The percentage amount of carbon in wood is: 112. گڑی میں کاربن کا فیصد تناسب ہے:

(A) 40%	(B) 52%	(C) 60%	(D) 70%
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113. The amount of carbon in lignite is: 113. لگنٹ میں کاربن کی مقدار ہے:

(A) 60%	(B) 70%	(C) 85%	(D) 90%
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114. The formula of ethane is: 114. میتھین کا قارمولہ ہے:

(A) CH_4	(B) C_2H_6	(C) C_2H_4	(D) C_4H_4
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115. The molecular formula of butane is: 115. بیوٹین کا مالیکیولر قارمولہ ہے:

(A) C_4H_8	(B) C_4H_{10}	(C) C_4H_{12}	(D) C_6H_6
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116. General formula of alkanes is: 116. ایلیٹز کا جنرل قارمولہ ہے:

(A) C_nH_{2n}	(B) $\text{C}_n\text{H}_{2n+1}$	(C) $\text{C}_n\text{H}_{2n-2}$	(D) $\text{C}_n\text{H}_{2n+2}$
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117. The formula of decane is: 117. ڈیکین کا قارمولہ ہے:

(A) $\text{C}_{10}\text{H}_{20}$	(B) $\text{C}_{10}\text{H}_{22}$	(C) C_{10}H_8	(D) $\text{C}_{10}\text{H}_{16}$
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118. The reduction of alkyl halides takes place in the presence of: 118. ایلیٹس ایلیٹز کی ریڈکشن کس کی موجودگی میں ہوتی ہے؟

(A) Zn / HCl	(B) Na / HCl	(C) Mg / HCl	(D) Cu / HCl
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119. The hydrogen atoms in pentane are: 119. پینٹین میں ہائیڈروجن ایٹمز ہوتے ہیں:

(A) 10	(B) 12	(C) 14	(D) 16
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120. The other name of alkanes is: 120. ایلیٹز کا دوسرا نام ہے:

(A) Halogens ہیلوجنز	(B) Olefins اولیٹنز	(C) Paraffins پارافینز	(D) Ethylene ایتھین
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121. Organic compounds containing $-\text{OH}$ group are called: 121. $-\text{OH}$ گروپ رکھنے والے آرگینک کمپاؤنڈز کہلاتے ہیں:

(A) Alcohols ایگولز	(B) Aldehydes ایلیڈز	(C) Catones کیٹونز	(D) Carboxylic acids کاربوآکسیک ایسڈز
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122. Which of the following compounds is aldehyde? 122. مندرجہ ذیل کمپاؤنڈز میں سے کون سا ایلیڈ ہے؟

(A) $\text{OH} - \text{CH}_2 - \text{CH}_3$	(B) $\text{COOH} - \text{CH}_3$	(C) CH_3CHO	(D) CH_3COCH_3
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123. General formula of saturated hydrocarbons is: 123. سچورٹڈ ہائیڈروکاربنز کا جنرل قارمولہ ہے:

(A) $\text{C}_n\text{H}_{2n-2}$	(B) $\text{C}_n\text{H}_{2n+2}$	(C) C_nH_{2n}	(D) C_nH_n
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124. Which of the following is saturated hydrocarbon? 124. ان میں سے کون سا سچورٹڈ ہائیڈروکاربن ہے؟

(A) Methane میتھین	(B) Propane پروپین	(C) Ethyne ایتھین	(D) Propyne پروپین
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125. Percentage of methane present in natural gas is: 125. قدرتی گیس کا کتنے فیصد میتھین پر مشتمل ہوتا ہے؟

(A) 75%	(B) 80%	(C) 85%	(D) 90%
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126. The formula of pentane is: 126. پینٹین کا قارمولہ ہے:

(A) C_5H_{12}	(B) C_5H_{10}	(C) C_5H_8	(D) C_5H_{14}
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127. The number of hydrogen atoms in pentane is: 127. پینٹین میں ہائیڈروجن ایٹمز ہوتے ہیں:

(A) 10	<input checked="" type="radio"/> (B) 12	(C) 14	(D) 16
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128. The chemical formula of chloroform is: 128. کلورو فارم کا کیمیائی قدر مولا ہے:

(A) CH ₃ Cl	(B) CH ₂ Cl ₂	(C) CCl ₄	<input checked="" type="radio"/> (D) CHCl ₃
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129. The other name of alkanes is: 129. الکیٹنز کا دوسرا نام ہے:

(A) Halogens ہیلو جینز	<input checked="" type="radio"/> (B) Paraffins پیرافینز	(C) Olefins اولی فنز	(D) Acetylenes ایسیٹیلینز
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130. Which of the following is called paraffins? 130. درج ذیل میں سے کسے پیرافینز کہتے ہیں؟

<input checked="" type="radio"/> (A) Alkanes الکیٹنز	(B) Alkenes الکیٹنز	(C) Alkynes الکیٹنز	(D) Alkyls الکیٹنز
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131. The main source of alkanes is: 131. الکیٹنز کا اہم سورس ہے:

<input checked="" type="radio"/> (A) Petroleum and natural gas پٹرولیم اور قدرتی گیس	(B) Air and water gas ہوا اور واٹر گیس	(C) Coal gas and water gas کول گیس اور واٹر گیس	(D) None of the above کوئی نہیں
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132. Marsh gas consists of: 132. مارش گیس مشتمل ہوتی ہے:

<input checked="" type="radio"/> (A) Methane میتھین	(B) Ethane ایٹھین	(C) Propane پراپین	(D) Butane بیوٹین
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133. Formula of ethane is: 133. ایٹھین کا قدر مولا ہے:

(A) CH ₄	(B) C ₂ H ₄	<input checked="" type="radio"/> (C) C ₂ H ₆	(D) C ₄ H ₄
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134. Which reactions are the characteristics properties of alkenes? 134. کون سے ری ایکشنز الکیٹنز کی اہم خصوصیت ہیں؟

(A) Substitution reaction سبسی جیوشن ری ایکشن	<input checked="" type="radio"/> (B) Oxidation reaction آکسڈیشن ری ایکشن	(C) Reduction reaction ریڈکشن ری ایکشن	(D) Addition reaction ایڈیشن ری ایکشن
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135. Alkenes are also called: 135. الکیٹنز..... بھی کہلاتی ہیں:

(A) Paraffins پیرافینز	<input checked="" type="radio"/> (B) Olefins اولی فنز	(C) Acetylenes ایسیٹیلینز	(D) Aromatic compounds ایرومٹک کمپائونڈز
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136. General formula of alkenes is: 136. الکیٹنز کا جنرل قدر مولا ہے:

<input checked="" type="radio"/> (A) C _n H _{2n-2}	(B) C _n H _{2n}	(C) C _n H _{2n+2}	(D) C _n H _{2n-1}
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137. Alkenes are known by the name: 137. الکیٹنز کو کس نام سے جانا جاتا ہے؟

(A) Methane میتھین	(B) Paraffins پیرافینز	<input checked="" type="radio"/> (C) Olefins اولی فنز	(D) Acetylenes ایسیٹیلینز
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138. Benzene is formed by the polymerization of: 138. ڈریج ڈیل میں کس کی پولیمرائزیشن سے بنیز بنائی جاتی ہے؟

(A) Methane میتھین	(B) Acetylene ایسیٹیلین	<input checked="" type="radio"/> (C) Ethene ایٹھین	(D) Butene بیوٹین
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139. The final product of the oxidation of acetylene is: 139. ایسیٹیلین کی آکسڈیشن کا آخری پروڈکٹ ہے:

(A) Oxalic acid آکزالک ایسڈ	<input checked="" type="radio"/> (B) Glycol گلیکول	(C) Glyoxal گلیوآکسال	(D) None of the above کوئی نہیں
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140. The catalyst used in the halogenations of ethene is: 140. ایٹھین کی ہائیڈرو جینیشن میں بلور کیا کاتالسٹ استعمال ہوتا ہے:

(A) Cu	(B) Mg	<input checked="" type="radio"/> (C) Ni	(D) Ag
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141. Ripening of bananas produces gas: 141. کیلے پکنے کے عمل کے دوران کون سی گیس خارج کرتے ہیں؟

(A) Methane میتھین گیس	(B) Ethane ایٹھین گیس	<input checked="" type="radio"/> (C) Ethene ایٹھین گیس	(D) Nitrogen نائٹرو جین گیس
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142. The general formula of alkynes is: 142. الکیٹنز کا جنرل قدر مولا ہے:

<input checked="" type="radio"/> (A) C _n H _{2n}	(B) C _n H _{2n+1}	(C) C _n H _{2n+2}	(D) C _n H _{2n-2}
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143. Dehalogenation of tetra halides is carried in the presence of: 143. ٹیٹرا ہیلو ایڈز کی ڈی ہیلو جینیشن کس کی موجودگی میں ہوتی ہے؟

(A) K	(B) Mg	(C) Na	<input checked="" type="radio"/> Zinc dust
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144. Alkynes are called: 144. الکاٹنز کو کہا جاتا ہے:

(A) Olefins اولی نٹز	(B) Ethene ایتھین	(C) Paraffins پرافن	<input checked="" type="radio"/> Acetylene اسیٹیلین
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145. Which one of following hydrocarbon gas reacts with acidic solution of $KMnO_4$ to neutralize its pink colour? 145.

کون سی ہائڈروکاربن گیس پوٹاشیم پرمینگنیٹ کے ایڑک سلوشن کے گلابی رنگ کو ختم کرتی ہے؟

(A) CH_4	<input checked="" type="radio"/> C_2H_4	(C) C_2H_6	(D) C_3H_8
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146. Dehydrohalogenation of vicinal dihalides takes place in the presence of: 146.

دیسل ڈائی ہیلو آئیڈز کی ڈی ہائڈرو ہیلو جینیشن کس کی موجودگی میں ہوتی ہے؟

(A) Aqueous NaOH NaOH اکیوس	<input checked="" type="radio"/> Alcoholic KOH KOH ایلکوحلک	(C) Aqueous KOH اکیوس KOH	(D) Alcoholic NaOH NaOH ایلکوحلک
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147. Ethyne is oxidized by $KMnO_4$ and hydroxyl groups add to triple bond: 147.

ایٹھن کو $KMnO_4$ کے ساتھ آکسائیڈز کیا جاتا ہے تو تریپل بانڈ پر ہائڈرو آکسل گروپس داخل ہو جاتے ہیں:

(A) Two دو	(B) Three تین	<input checked="" type="radio"/> Four چار	(D) Five پانچ
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148. The percentage quantity of acetylene in coal gas is: 148.

کول گیس میں اسیٹیلین کی فیصد مقدار ہوتی ہے:

<input checked="" type="radio"/> 0.06%	(B) 0.7%	(C) 0.08%	(D) 0.09%
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149. Acetylene is oxidized by $KMnO_4$ and hydroxyl groups add to triple bond: 149.

ایٹھن کی آکسائیڈ جینیشن کا آخری پروڈکٹ ہے:

(A) Oxalic acid آکسالیک ایسڈ	<input checked="" type="radio"/> Glycol گلیکول	(C) Glyoxal گلیکسالی	(D) None of the above کوئی نہیں
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150. The molecular formula of acetylene is: 150.

ایٹھن کا مالیکیولر فارمولا ہے:

(A) C_2H_6	(B) C_2H_4	<input checked="" type="radio"/> C_2H_2	(D) C_2H_5
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151. General formula of carbohydrates is: 151.

کاربوہائڈریٹس کا جنرل فارمولا ہے:

(A) $C_{n-1}(H_2O)_n$	(B) $C_n(H_2O)_{n-1}$	<input checked="" type="radio"/> $C_n(H_2O)_n$	(D) $C_n(HO)_n$
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152. Which simple sugar cannot be hydrolyzed? 152.

کون سی سادہ شوگر ہے جسے ہائڈرولائز نہیں کیا جاسکتا؟

<input checked="" type="radio"/> Glucose گلوکوز	(B) Sucrose سکرز	(C) Starch سٹارچ	(D) Cellulose سیلولوز
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153. Lactose is a type of sugar, it consists of sugar and: 153.

لیکٹوز شوگر کی ایک قسم ہے جو گلوکوز اور پر مشتمل ہے:

(A) Sucrose سکرز	(B) Maltose مالٹوز	(C) Starch سٹارچ	<input checked="" type="radio"/> Galactose گالاکٹوز
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154. In which part of digestive system glucose is absorbed? 154.

گلوکوز ڈیگسٹو سسٹم کے کس حصے میں جذب ہوتا ہے؟

(A) Stomach معدہ	(B) Liver جگر	<input checked="" type="radio"/> Small intestine چھوٹی آنت	(D) Large intestine بڑی آنت
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155. Which of the following is pentahydroxy aldehyde? 155.

درج ذیل میں سے کون سا پینٹا ہائڈرو آکسی ایلڈی ہائڈ ہے؟

(A) Starch سٹارچ	<input checked="" type="radio"/> Glucose گلوکوز	(C) Fructose فروکٹوز	(D) Sucrose سکرز
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156. Which of the following is trisaccharide? 156.

درج ذیل میں سے کون سا ٹری سیکریٹائیڈ ہے؟

(A) Carbohydrates کاربوہائڈریٹس	(B) Proteins پروٹینز	<input checked="" type="radio"/> Lipids لیپڈز	(D) Vitamins وٹامن
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157. Which of the following is pure cellulose? 157.

کون سی ایک خالص سیلولوز ہے؟

(A) Maize مکئی	(B) Rice چاول	(C) Bread روٹی	(D) Wheat گندم
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158. Which of the following is crystalline solid? 158.

مندرجہ ذیل میں سے کون سا کرسٹالائن ٹھوس ہے؟

<input checked="" type="radio"/> Glucose گلوکوز	(B) Starch سٹارچ	(C) Cellulose سیلولوز	(D) Glycogen گلیکوجن
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159. Mono saccharides consists of carbon atoms: 159.

مونو سیکریٹائیڈز کتنے کاربن ایٹمز پر مشتمل ہوتے ہیں؟

(A) Two to four چار سے دو (B) Four to eight چار سے آٹھ (C) Three to nine تین سے نو (D) Five to ten پانچ سے دس

160. Which of the following does not contain starch? 160. مندرجہ ذیل میں سے کس میں سٹارچ موجود نہیں ہوتی؟

(A) Sugarcane شکرگندہ (B) Maize مکئی (C) Barley جو (D) Potatoes آلو

161. Pentahydroxy ketone is called: 161. پینٹاہائیڈرو آکسی کیٹون کہلاتا ہے:

(A) Glucose گلوکوز (B) Starch سٹارچ (C) Sucrose سکرورس (D) Fructose فروکٹوز

162. Chemical formula of fructose is: 162. فروکٹوز کا کیمیائی قدر مولا ہے:

(A) $C_{12}H_{22}O_{11}$ (B) $C_6H_{12}O_6$ (C) C_4H_{10} (D) C_5H_{12}

163. Which protects us from muscle cramping? 163. ہمارے عضلات کی کڑپنے سے کون حفاظت کرتا ہے؟

(A) Proteins پروٹینز (B) Lipids لیپڈز (C) Vitamins وٹامنز (D) Carbohydrates کاربوہائیڈریٹس

164. Amino acids are linked to each other through: 164. امینو ایسڈز ایک دوسرے کے ساتھ لکے ہوتے ہیں:

(A) Hydrogen link ہائیڈروجن لک (B) Ionic link آئیونک لک (C) Gelatin link جیلٹین لک (D) Peptide link پپٹائڈ لک

165. Which of the following does not contain protein? 165. مندرجہ ذیل میں سے کس میں پروٹین موجود نہیں ہوتی؟

(A) Pulses دالوں میں (B) Potatoes آلوؤں میں (C) Beans بھلیوں میں (D) Eggs انڈے میں

166. Gelatin protein is present in: 166. جیلٹین پروٹین پائی جاتی ہے:

(A) Blood خون میں (B) Skin جلد میں (C) Heart دل میں (D) Bones ہڈیوں میں

167. Polymers of amino acids are: 167. امینو ایسڈز کے پولیمرز ہیں:

(A) Carbohydrates کاربوہائیڈریٹس (B) Proteins پروٹینز (C) Vitamins وٹامنز (D) Lipids لیپڈز

168. Proteins are by weight of cell: 168. پروجین کے وزن کا تقریباً فیصد حصہ پروٹینز سے بنا ہوتا ہے:

(A) 40% (B) 35% (C) 65% (D) 50%

169. The body reactions are catalyzed by: 169. جسم میں ہونے والے کیمیائی ردی ایکشنز کو کیلا کر کے ہے:

(A) Amino acids امینو ایسڈز (B) Lipids لیپڈز (C) Enzymes انزائمز (D) Fatty acids فیٹی ایسڈز

170. The chemical formula of citric acid is: 170. سٹرک ایسڈ کا کیمیائی قدر مولا ہے:

(A) $C_{17}H_{35}COOH$ (B) $C_{17}H_{33}COOH$ (C) $C_{17}H_{37}COOH$ (D) $C_{15}H_{31}COOH$

171. Building blocks of lipids are: 171. لیپڈز کے بلاک بلاکس کہلاتے ہیں:

(A) Nucleic acids نیوکلئک ایسڈز (B) Amino acids امینو ایسڈز (C) Fatty acids فیٹی ایسڈز (D) Mono saccharides مونو سکرائیڈز

172. The formula of palmitic acid is: 172. پالمیٹک ایسڈ کا قدر مولا ہے:

(A) $C_{15}H_{31}COOH$ (B) $C_{17}H_{35}COOH$ (C) $C_{15}H_{32}COOH$ (D) $C_{17}H_{36}COOH$

173. Catalyst used in the hydrogenation of vegetable oil is: 173. ویکٹیل آئل کی ہائیڈروجنیشن میں بطور کیتالسٹ استعمال ہوتا ہے:

(A) Al (B) Cu (C) Ni (D) Pb

174. Which scientist discovered the structure of DNA? 174. DNA کا سٹرکچر کس سائنسدان نے دریافت کیا؟

(A) Hopkins ہاپکنز (B) John Dalton جان ڈالٹن (C) Watson and Crick واٹسن اینڈ کریک (D) Robert Hook رابرٹ ہک

175. The nitrogen present in urea is used by plants to synthesize: 175. یوریا میں موجود نائٹروجن کس کی تیاری میں استعمال کرتے ہیں؟

(A) Sugar شوگر (B) Proteins پروٹینز (C) Fats فیٹس (D) DNA DNA

176. Vitamins B complex contains: 176. B وٹامن کمپلیکس میں شامل ہوتے ہیں:

<input checked="" type="radio"/> 10 vitamins 10 وٹامنز	<input type="radio"/> (B) 8 vitamins 8 وٹامنز	<input type="radio"/> (C) 6 vitamins 6 وٹامنز	<input type="radio"/> (D) 12 vitamins 12 وٹامنز
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177. Deficiency of vitamin D causes: 177. وٹامن D کی کمی سے ہوتی ہے:

<input checked="" type="radio"/> (A) Rickets سوکے کی بیماری	<input type="radio"/> (B) Scurvy سکروی	<input type="radio"/> (C) Anemia اینیما	<input type="radio"/> (D) Night blindness نائٹ بلائنڈنیس
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178. Who proposed the name of vitamin? 178. وٹامن کا نام کس نے تجویز کیا؟

<input checked="" type="radio"/> (A) Funk فک	<input type="radio"/> (B) Watson واٹسن	<input type="radio"/> (C) F Crick ایف-کرک	<input type="radio"/> (D) Lewis لیوس
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179. Rickets disease is caused by the deficiency of vitamin: 179. سوکے کی بیماری کس وٹامن کی کمی سے ہوتی ہے؟

<input checked="" type="radio"/> (A) D وٹامن D	<input type="radio"/> (B) A وٹامن A	<input type="radio"/> (C) E وٹامن E	<input type="radio"/> (D) C وٹامن C
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180. Who invented vitamin B₁ (Thiamin)? 180. وٹامن B₁ (تھامین) کو کس نے دریافت کیا؟

<input type="radio"/> (A) Hopkins ہاپکنز	<input checked="" type="radio"/> (B) Funk فک	<input type="radio"/> (C) J Watson جے واٹسن	<input type="radio"/> (D) Davy ڈیوی
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181. is caused by the deficiency of vitamin A: 181. وٹامن A کی کمی کی وجہ سے ہوتی ہے:

<input checked="" type="radio"/> (A) Night blindness نائٹ بلائنڈنیس	<input type="radio"/> (B) Sore eyes آنکھوں کی جلن	<input type="radio"/> (C) Rickets سوکے کی بیماری	<input type="radio"/> (D) Both a and b
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182. Fat soluble vitamin is: 182. لیٹ سولبل وٹامن ہے:

<input type="radio"/> (A) AA	<input type="radio"/> (B) EE	<input type="radio"/> (C) KK	<input checked="" type="radio"/> (D) All تمام
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183. Hopkins noticed for the first time: 183. ہاپکنز نے پہلی دفعہ مشاہدہ کیا:

<input type="radio"/> (A) Carbohydrates کاربوہائیڈریٹس	<input type="radio"/> (B) Proteins پروٹینز	<input type="radio"/> (C) Lipids لیپڈز	<input checked="" type="radio"/> (D) Vitamins وٹامنز
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184. How many percentage of sunlight is absorbed by atmospheric gases? 184. سورج کی روشنی کا کتنے فیصد حصہ ایٹموسفیرک گیسز جذب کرتی ہیں؟

<input type="radio"/> (A) 12%	<input checked="" type="radio"/> (B) 18%	<input type="radio"/> (C) 24%	<input type="radio"/> (D) 3%
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185. The two major components of atmosphere are: 185. ایٹموسفیر کے دو اہم اجزاء ہیں:

<input type="radio"/> (A) Hydrogen and oxygen ہائیڈروجن اور آکسیجن	<input type="radio"/> (B) Nitrogen and hydrogen نائٹروجن اور ہائیڈروجن	<input checked="" type="radio"/> (C) Nitrogen and oxygen نائٹروجن اور آکسیجن	<input type="radio"/> (D) Oxygen and water آکسیجن اور پانی
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186. Nitrogen and oxygen are% of atmosphere: 186. نائٹروجن اور آکسیجن ایٹموسفیر کا کتنے فیصد حصہ ہیں؟

<input type="radio"/> (A) 80%	<input type="radio"/> (B) 90%	<input checked="" type="radio"/> (C) 99%	<input type="radio"/> (D) 75%
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187. The volume of CO₂ in dry by ratio is: 187. الجھاؤ حجم کاربن ڈائی آکسائیڈ کا خشک ہوا میں تناسب ہوتا ہے:

<input checked="" type="radio"/> (A) 0.03%	<input type="radio"/> (B) 0.93%	<input type="radio"/> (C) 20.94%	<input type="radio"/> (D) 78.09%
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188. On which bases atmosphere is divided into four regions? 188. ایٹموسفیر کو کس بنیاد پر چار ریجنز میں تقسیم کیا گیا ہے؟

<input type="radio"/> (A) Change in pressure دباؤ میں تبدیلی	<input type="radio"/> (B) Change in radiations ریڈی ایشنز میں تبدیلی	<input checked="" type="radio"/> (C) Change in temperature ٹمپریچر میں تبدیلی	<input type="radio"/> (D) Change in weather موسم میں تبدیلی
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189. Height of stratosphere from earth's surface is: 189. سٹریٹوسفیر سطح زمین سے بلندی پر ہے:

<input type="radio"/> (A) 30 km	<input type="radio"/> (B) 40 km	<input checked="" type="radio"/> (C) 50 km	<input type="radio"/> (D) 60 km
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190. Thermosphere layer is at height above earth's surface is: 190. تھرموسفیر لیئر کی زمین کی سطح سے بلندی ہے:

<input type="radio"/> (A) 0-12 km	<input type="radio"/> (B) 12-50 km	<input type="radio"/> (C) 50-85 km	<input checked="" type="radio"/> (D) 85-120 km
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191. The major constituents of troposphere are nitrogen and: 191. ٹروپوسفیر کے بنیادی اجزاء نائٹروجن اور ہیں:

<input type="radio"/> (A) Hydrogen ہائیڈروجن	<input type="radio"/> (B) Carbon dioxide کاربن ڈائی آکسائیڈ	<input checked="" type="radio"/> (C) Oxygen آکسیجن	<input type="radio"/> (D) Sulphur سلفر
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192. At the height 85-120 km from earth's surface is: 192. زمین کی سطح سے 85 سے 120 کلومیٹر تک کیا موجود ہوتا ہے؟

(A) Troposphere ٹروپوسفر	(B) Mesosphere میزوسفر	(C) Stratosphere سٹریٹوسفیر	(D) Thermosphere تھرموسفر
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193. The layer of atmosphere which is next to troposphere and extends up to 50 km is called: 193
ٹروپوسفر سے اوپر 50 کلومیٹر تک پھیلتی کھلتی ہے:

(A) Mesosphere میزوسفر	(B) Hydrosphere ہائڈروسفر	(C) Thermosphere تھرموسفر	(D) Stratosphere سٹریٹوسفیر
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194. Waste material that pollutes air, water and soil is termed as: 194
ایک ہکارہ مادہ جو ہوا، پانی اور مٹی کو آلودہ کرتا ہے:

(A) Pollution پلوشن	(B) Pollutant پلوشنٹ	(C) Solvent سولونٹ	(D) Solution سلوشن
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195. A primary pollutant is: 195
ایک پرائمری پلوشنٹ ہے:

(A) CH ₄	(B) HNO ₃	(C) H ₂ CO ₃	(D) H ₂ SO ₄
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196. Carbon monoxide is harmful to us because: 196
کاربن مونو آکسائیڈ ہمارے لیے نقصان دہ ہے کیونکہ:

(A) Paralysis lungs = پیچھڑوں کو مفلوج کر دیتی ہے	(B) Damages lungs tissue = پیچھڑوں کے نشوز کو تباہ کر دیتی ہے	(C) Reduces oxygen carrying ability of hemoglobin = یہ ہیموگلوبن کی آکسیجن لے جانے کی صلاحیت کو کم کر دیتی ہے	(D) Makes the blood coagulate = یہ خون کے لوتھڑے بناتی ہے
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197. Every year there is a rise of °C in atmospheric temperature due to carbon dioxide in air: 197
ہوا میں کاربن ڈائی آکسائیڈ میں اضافے کی وجہ سے ہر سال تقریباً °C ایٹوسفیئرک ٹمپریچر میں اضافہ ہوتا ہے:

(A) 2°C	(B) 0.05°C	(C) 0.02°C	(D) 0.01°C
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198. A secondary pollutant is: 198
..... سیکنڈری پلوشنٹ ہے:

(A) SO ₂	(B) CO ₂	(C) CH ₄	(D) HCl
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199. The pH of normal rain water is: 199
جرنل بارش کے پانی کی pH ہوتی ہے:

(A) 5.5-6	(B) 5.4-6	(C) 6-6.5	(D) 5.6-6
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200. The pH of acid rain is: 200
ایسڈ رین کی pH ہوتی ہے:

(A) 4	(B) 5	(C) 6-6.5	(D) 7
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201. Which one of the metal clogs gills of the fish? 201
کس دھات کی زیادہ مقدار مچھلیوں کے گھڑ کو بند کر دیتی ہے؟

(A) Iron آئرن	(B) Copper کاپر	(C) Aluminium ایلمینیم	(D) Lead لیڈ
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202. Cause of global warming is: 202
گلوبل وارمنگ کی وجہ ہے:

(A) CO ₂ Gas CO ₂ گیس	(B) SO ₂ Gas SO ₂ گیس	(C) NO ₂ Gas NO ₂ گیس	(D) O ₂ Gas O ₂ گیس
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203. In which region ozone formed? 203
اوزون کس ریجن میں بنتی ہے؟

(A) Troposphere ٹروپوسفر میں	(B) Stratosphere سٹریٹوسفیر میں	(C) Mesosphere میزوسفر میں	(D) Thermosphere تھرموسفر میں
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204. Sea surface is protected from ultraviolet radiations in global warming by: 204
گلوبل وارمنگ سے سمندر کی سطح کو الٹرا وائلٹ ریڈی ایشنز سے محفوظ رکھتی ہے؟

(A) CO ₂ Gas CO ₂ گیس	(B) SO ₂ Gas SO ₂ گیس	(C) NO ₂ Gas NO ₂ گیس	(D) O ₃ Gas O ₃ گیس
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205. The formula of ozone is: 205
اوزون کا فارمولا ہے:

(A) O ₂	(B) O ₃	(C) O	(D) CO
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206. Which one of the reasons of global warming? 206
گلوبل وارمنگ کی مندرجہ ذیل میں سے کون سی وجہ ہے؟

(A) Absorption of infrared radiation emitted by the earth IR زمین کی سطح سے خارج ہونے والی ریڈی ایشنز کا جذب ہونا	(B) Absorption of infrared radiations coming from the earth ریڈی ایشنز کا IR سورج سے آنے والی جذب ہونا	(C) Absorption of ultraviolet radiations coming from the earth ریڈی ایشنز کا UV سورج سے آنے والی جذب ہونا	(D) Emission of ultraviolet radiations by the earth ریڈی ایشنز کا UV زمین کی سطح سے خارج ہونا
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207. Which gas is called greenhouse gas? 207. کون سی گیس گرین ہاؤس گیس کہلاتی ہے؟

(A) CO ₂	(B) CO	(C) N ₂	(D) HCl
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208. The oceans contain about of total world's water: 208. دنیا کے کل پانی کا کتنے فی صد حصہ سمندری پانی پر مشتمل ہے؟

(A) 91%	(B) 93%	(C) 95%	(D) 97%
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209. The boiling point of water is: 209. پانی کا بوائیگ پوائنٹ ہے:

(A) 0°C	(B) 25°C	(C) 80°C	(D) 100°C
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210. Density of water is maximum at: 210. کس ٹیمپریچر پر پانی کی ڈینسٹی سب سے زیادہ ہوتی ہے؟

(A) 0°C	(B) 2°C	(C) 4°C	(D) 6°C
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211. The density of water at 4°C is: 211. 4°C پر پانی کی ڈینسٹی ہوتی ہے:

(A) 1 gcm ⁻³	(B) 2 gcm ⁻³	(C) 3 gcm ⁻³	(D) 4 gcm ⁻⁴
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212. The freezing point of water at sea level is: 212. سمندر کی سطح پر پانی کا فریزنگ پوائنٹ ہوتا ہے:

(A) 0°C	(B) 1°C	(C) 2°C	(D) 3°C
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213. How much percentage of water is drinkable out of all the water present on Earth? 213. زمین پر موجود پانی کا کل کتنے فیصد حصہ پینے کے قابل ہے؟

(A) 0.001%	(B) 2.1%	(C) 0.2%	(D) 90%
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214. Which of the following ion is not a cause of water hardness? 214. مندرجہ ذیل آئنز میں سے کونسا آئن واٹر ہارڈنٹس کی وجہ نہیں بنتا ہے؟

(A) Ca ²⁺	(B) Mg ²⁺	(C) SO ₄ ²⁻	(D) Na ⁺
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215. The removal of Mg²⁺ and Ca²⁺ ions which are responsible for the hardness of water is called: 215. واٹر ہارڈنٹس کا سبب بننے والے Mg²⁺ اور Ca²⁺ آئنز کا اخراج کہلاتا ہے:

(A) Permanent hardness پرمانینٹ ہارڈنٹس	(B) Temporary hardness ٹیمپری ہارڈنٹس	(C) Water softening واٹر سوٹنگ	(D) Hydrogen bonding ہائیڈروجن بانڈنگ
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216. Which of the following method is used for removing temporary water hardness is? 216. پانی کی ٹیمپری ہارڈنٹس کو ختم کرنے کے لیے کون سا طریقہ استعمال کیا جاتا ہے؟

(A) Clark's method کلارک کا طریقہ	(B) Washing soda method واشنگ سوڈا کا طریقہ	(C) Sodium zeolite سڈیم زیولائٹ	(D) Filtration method فلٹریشن میتھڈ
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217. The chemical used in Clark's method is: 217. کلارک کے طریقے میں استعمال ہونے والا کیمیکل ہے:

(A) Ca(HCO ₃) ₂	(B) Ca-Zeolite	(C) Zeolite Na ₂	(D) Ca(OH) ₂
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218. The types of water hardness are: 218. پانی کی ہارڈنٹس کی اقسام ہوتی ہیں:

(A) Two	(B) Three	(C) Four	(D) Five
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219. Permanent hardness is because of: 219. پرمانینٹ ہارڈنٹس کی وجہ سے ہوتی ہے:

(A) Ca(HCO ₃) ₂	(B) Mg(HCO ₃) ₂	(C) NaCl	(D) CaCl ₂
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220. Temporary hardness of water is removed by adding: 220. پانی کے مادی سختی میں کس کو شامل کر کے دور کیا جاسکتا ہے؟

(A) Ca(HCO ₃) ₂	(B) Mg(HCO ₃) ₂	(C) NaCl	(D) CaCl ₂
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220. Temporary hardness of water is removed by adding:

(A) Ca(HCO ₃) ₂	(B) Mg(HCO ₃) ₂	(C) NaCl	(D) CaCl ₂
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(A) NaOH	(B) KOH	(C) Ca(OH) ₂	(D) CaSO ₄
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221. Temporary hardness of water can be removed by adding: پانی کی مہرری ہارڈنیس..... شامل کرنے سے ختم کی جاسکتی ہے:

(A) Lime stone لائم سٹون	(B) Slaked lime سلیکڈ لائم	(C) Quick lime کوئیک لائم	(D) Washing soda واشنگ سڈا
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222. Which of the following is an agricultural influent? درج ذیل میں سے کون سا ایگرکولچرل انفلوینٹ ہے؟

(A) Heavy metals بھاری میٹلز	(B) Mineral acids منرل ایسڈز	(C) Detergents ڈیٹرجنٹس	(D) Fertilizers فرٹیلائزرز
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223. In water, ions are responsible for the quick growth of algae: پانی میں..... آئنز کی وجہ سے تیز نمو ہوتی ہے:

(A) NO ₃ ⁻ , PO ₄ ³⁻	(B) Br ⁻ , Cl ⁻	(C) Cl ⁻ , SiO ₃ ²⁻	(D) SO ₄ ²⁻ , CO ₃ ²⁻
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224. The rain water is slightly acidic it is because: بارش کا پانی معمولی ایسڈک ہوتا ہے اس کی وجہ:

(A) SO ₃	(B) CO ₂	(C) SO ₂	(D) NO ₂
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225. Vibrios cholera bacteria causes the disease: وائبریس کولرا بیکٹیریا کون سی بیماری پیدا کرتا ہے؟

(A) Cholera کولرا	(B) Dysentery ڈائسنٹری	(C) Typhoid ٹائفائیڈ	(D) Hepatitis ہیپاٹائٹس
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226. The cause of cholera is: کولرا کی وجہ ہے:

(A) Protozoa پروٹوزوا	(B) Virus وائرس	(C) Bacteria بیکٹیریا	(D) Fungi فنجی
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227. Swimming pools are cleaned by a process: سواننگ پول کو کس پروسیس سے صاف کیا جاتا ہے؟

(A) Bromination برومائنیشن	(B) Hydrogenation ہائیڈروجنیشن	(C) Nitration نائٹریشن	(D) Chlorination کلورینیشن
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228. The industrial effluents, when taken by men, are responsible for disease: جب انڈسٹریل اٹویشٹس کا پانی انسان استعمال کرتے ہیں تو کس بیماری کا باعث ہو سکتے ہیں؟

(A) Cancer کینسر	(B) Asthma آسٹما	(C) Pleague پلےگ	(D) Cholera کولرا
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229. Cholera is caused by: کولرا کی وجہ ہے:

(A) Virus وائرس	(B) Bacteria بیکٹیریا	(C) Fungi فنجی	(D) Protozoa پروٹوزوا
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230. Chalco-pyrite is an ore of: چالکو پائیرائٹ کس کی اور ہے؟

(A) Copper کانپرہ	(B) Silver سلور	(C) Iron آئرن	(D) Aluminium ایلمینیم
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231. The chemical formula of chalco-pyrite is: چالکو پائیرائٹ کا کیمیکل فارمولا ہے:

(A) Cu ₂ S	(B) CuFe ₂ S	(C) CuS	(D) FeS
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232. The underground and other impurities present in minerals are called: منرلز میں موجود زمینی اور دوسری اٹویشٹس کہا جاتی ہیں:

(A) Metallurgy میٹلرجی	(B) Ores اوزز	(C) Gang گینگ	(D) Compounds کمپائونڈز
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233. is called the king of chemicals: کنگ آف کیمیکلز ہے:

(A) HCl	(B) HNO ₃	(C) H ₂ SO ₄	(D) H ₃ PO ₄
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234. The brown colour of the hairs is due to the presence of compounds: ہمارے بالوں کا براؤن رنگ کے کمپائونڈز کی وجہ سے ہوتا ہے:

(A) Titanium ٹائیٹینیم	(B) Copper کانپرہ	(C) Molybdenum مولیبڈینیم	(D) Mercury مرکری
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235. Ammonia is prepared by the process called: آمونیاکس پروسیس سے تیار کیا جاتا ہے؟

(A) Solvay's process سولوائے پروسیس	(B) Hibr's process ہبر پروسیس	(C) Floatation process فلوتیشن پروسیس	(D) Hyber's process ہائیر پروسیس
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236. The quantity of nitrogen in urea is: یوریا میں نائٹروجن کی مقدار ہوتی ہے:

(A) 76.6%	(B) 66.6%	(C) 56.6%	(D) 46.6%
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237. The preparation of urea consists of stages: یوریا کی تیاری مراحل پر مشتمل ہوتی ہے:

(A) Two دو	<input checked="" type="radio"/> Three تین	(C) Four چار	(D) Five پانچ
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238. In Haber's process, the catalyst used is: 238. ہابر کے عمل میں کیتالسٹ استعمال ہوتا ہے:

<input checked="" type="radio"/> Nickel نیکل	(B) Platinum پلائٹینم	(C) Cadmium کیڈمیم	(D) Sodium سوڈیم
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239. The number of units in Pakistan for the preparation of urea are: 239. پاکستان میں یوریا تیار کرنے کے یونٹس ہیں:

<input checked="" type="radio"/> Four چار	(B) Five پانچ	(C) Six چھ	(D) Ten دس
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240. The gas prepared by haber process is: 240. ہابر پروسس کی مدد سے تیار ہونے والی گیس ہے:

(A) CO ₂	(B) SO ₂	(C) HI	<input checked="" type="radio"/> NH ₃
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241. Petroleum fraction having molecular composition C₁ - C₄ is called: 241. پٹرولیم فریکشن جس کی مالیکیولر کمپوزیشن C₁ - C₄ ہو کہلاتی ہے:

(A) Petroleum gas پٹرولیم گیس	(B) Petroleum ether پٹرولیم ایٹر	(C) Gasoline or petrol گیسولین یا پٹرول	(D) Kerosene oil کیروسین آئل
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242. Petroleum fraction having molecular composition C₅ - C₇ is called: 242. پٹرولیم فریکشن جس کی مالیکیولر کمپوزیشن C₅ - C₇ ہو کہلاتی ہے:

<input checked="" type="radio"/> Petroleum gas پٹرولیم گیس	(B) Petroleum ether پٹرولیم ایٹر	(C) Gasoline or petrol گیسولین یا پٹرول	(D) Kerosene oil کیروسین آئل
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243. How many carbons atoms are there in gasoline? 243. گیسولین میں کتنے کاربن ایٹمز ہوتے ہیں؟

(A) Five to seven پانچ سے سات	<input checked="" type="radio"/> Seven to ten سات سے دس	(C) Thirteen to fifteen تیرہ سے پندرہ	(D) Fifteen to eighteen پندرہ سے اٹھارہ
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244. The molecular composition of kerosene oil is: 244. کیروسین آئل کی مالیکیولر کمپوزیشن ہے:

(A) C ₅ - C ₇	(B) C ₇ - C ₁₀	<input checked="" type="radio"/> C ₁₀ - C ₁₂	(D) C ₁₃ - C ₁₅
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245. The carbon composition of diesel oil is: 245. ڈیزل آئل کی کاربن کمپوزیشن ہے:

(A) C ₇ - C ₁₀	(B) C ₁₀ - C ₁₂	<input checked="" type="radio"/> C ₁₃ - C ₁₅	(D) C ₁₅ - C ₁₈
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246. Petroleum fraction whose composition is C₅ and C₇ is called: 246. پٹرولیم فریکشن جس کی کمپوزیشن C₅ اور C₇ ہو کہلاتی ہے:

(A) Petroleum gas پٹرولیم گیس	<input checked="" type="radio"/> Petroleum ether پٹرولیم ایٹر	(C) Gasoline or petrol گیسولین یا پٹرول	(D) Kerosene oil کیروسین آئل
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247. Which fraction of petroleum is used as fuel in ships and industries? 247. پٹرولیم کی کون سی فریکشن بحری جہازوں اور انڈسٹریوں میں بطور فیل استعمال ہوتا ہے؟

(A) Petroleum gas پٹرولیم گیس	(B) Petrol پٹرول	(C) Diesel oil ڈیزل آئل	<input checked="" type="radio"/> Fuel oil فیل آئل
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248. Which of the following fraction is used as laboratory solvent? 248. درج ذیل میں سے کون سی فریکشن بطور لیبارٹری سولونٹ استعمال ہوتی ہے؟

(A) Kerosene oil کیروسین آئل	(B) Diesel oil ڈیزل آئل	<input checked="" type="radio"/> Petroleum ether پٹرولیم ایٹر	(D) Fuel oil فیل آئل
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249. The molecular composition of gasoline is: 249. گیسولین کی مالیکیولر کمپوزیشن ہے:

(A) C ₅ - C ₇	<input checked="" type="radio"/> C ₇ - C ₁₀	(C) C ₁₀ - C ₁₂	(D) C ₁₃ - C ₁₅
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250. The molecular composition of fuel oil is: 250. فیل آئل کی مالیکیولر کمپوزیشن ہے:

(A) C ₇ - C ₁₀	(B) C ₁₀ - C ₁₂	(C) C ₁₃ - C ₁₅	<input checked="" type="radio"/> C ₁₅ - C ₁₈
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251. The boiling range of gasoline or petrol is: 251. گیسولین یا پٹرول کی بوائنگ رینج ہے:

<input checked="" type="radio"/> 80 to 170°C	(B) 170 to 250°C	(C) 250 to 350°C	(D) 350 to 400°C
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252. The boiling range of petroleum ether is: 252. پٹرولیم ایٹر کی بوائنگ رینج ہے:

(A) 170 - 250°C	<input checked="" type="radio"/> 30 - 80°C	(C) 20 - 170°C	(D) 80 - 170°C
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