

Class 9 Science

Complete Question Bank (with Answers)

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Chapter 1: Matter in Our Surroundings

Introduction to Matter

1. What is matter?

- ☐ Anything that has mass and occupies space
- ☐ Only living things
- ☐ Only solid things
- ☐ Ideas and thoughts

Answer: Anything that has mass and occupies space

2. The SI unit of mass is?

- ☐ kilogram (kg)
- ☐ gram (g)
- ☐ milligram (mg)
- ☐ tonne

Answer: kilogram (kg)

3. The SI unit of volume is?

- ☐ cubic metre (m^3)
- ☐ litre (L)
- ☐ millilitre (mL)
- ☐ cubic centimetre (cm^3)

Answer: cubic metre (m^3)

4. Early Indian philosophers classified matter into?

- ☐ Five basic elements (Panch Tatva)
- ☐ Three states
- ☐ Atoms and molecules
- ☐ Living and non-living

Answer: Five basic elements (Panch Tatva)

5. Which of these is NOT matter?

- ☐ Love
- ☐ Air
- ☐ Water
- ☐ Sand

Answer: Love

Physical Nature of Matter

1. Matter is made up of?

- ☐ Particles
- ☐ Continuous blocks
- ☐ Waves
- ☐ Energy

Answer: Particles

2. The particles of matter are?

- ☐ Very small
- ☐ Very large
- ☐ Visible to naked eye
- ☐ Stationary

Answer: Very small

3. What happens when salt dissolves in water?

- ☐ Salt particles get into spaces between water particles
- ☐ Salt disappears completely
- ☐ Water volume increases significantly
- ☐ Salt turns into water

Answer: Salt particles get into spaces between water particles

4. How many particles are there in a small crystal of potassium permanganate?

- ☐ Millions
- ☐ Hundred
- ☐ One
- ☐ Ten

Answer: Millions

5. Can we see particles of matter with naked eyes?

- ☐ No
- ☐ Yes
- ☐ Only in solids
- ☐ Only in gases

Answer: No

Characteristics of Particles: Space and Movement

1. What is diffusion?

- ☐ Intermixing of particles of two different types of matter
- ☐ Change of state from solid to liquid
- ☐ Movement of particles due to gravity
- ☐ Separation of particles

Answer: Intermixing of particles of two different types of matter

2. What happens to kinetic energy with temperature rise?

- ☐ Increases
- ☐ Decreases
- ☐ Remains same
- ☐ Becomes zero

Answer: Increases

3. Particles of matter are continuously?

- ☐ Moving
- ☐ Stationary
- ☐ Vibrating only in solids
- ☐ Sleeping

Answer: Moving

4. When we make tea, particles of one matter get into?

- ☐ Spaces between particles of the other
- ☐ Nucleus of the other
- ☐ Outside the container
- ☐ None of the above

Answer: Spaces between particles of the other

5. Rate of mixing changes with?

- ☐ Temperature
- ☐ Pressure
- ☐ Volume
- ☐ Color

Answer: Temperature

Characteristics of Particles: Attraction

1. Particles of matter have ____ acting between them.

- ☐ Force
- ☐ Friction
- ☐ Gravity only
- ☐ Nothing

Answer: Force

2. Which has the strongest force of attraction?

- ☐ Iron nail
- ☐ Water
- ☐ Air
- ☐ Chalk

Answer: Iron nail

3. Which has the weakest force of attraction?

- ☐ Oxygen gas
- ☐ Water
- ☐ Sugar
- ☐ Iron

Answer: Oxygen gas

4. Why can a diver cut through water?

- ☐ Weak forces of attraction between water particles
- ☐ Water is a solid
- ☐ Diver is very strong
- ☐ Water has no particles

Answer: Weak forces of attraction between water particles

5. This force keeps the particles?

- ☐ Together
- ☐ Apart
- ☐ Moving
- ☐ Still

Answer: Together

States of Matter: The Solid State

1. Solids have?

- ☐ Definite shape and fixed volume
- ☐ No definite shape but fixed volume
- ☐ No definite shape or volume
- ☐ Fixed shape but no fixed volume

Answer: Definite shape and fixed volume

2. Solids are?

- ☐ Rigid
- ☐ Fluid
- ☐ Compressible
- ☐ Gaseous

Answer: Rigid

3. Why is a sponge compressible?

- ☐ It has minute holes with trapped air
- ☐ It is a liquid
- ☐ It is not matter
- ☐ It has no mass

Answer: It has minute holes with trapped air

4. Compressibility of solids is?

- ☐ Negligible
- ☐ High
- ☐ Moderate
- ☐ Variable

Answer: Negligible

5. A rubber band changes shape under force. Is it a solid?

- ☐ Yes
- ☐ No
- ☐ It is a liquid
- ☐ It is a gas

Answer: Yes

The Liquid State

1. Liquids have?

- ☐ No fixed shape but fixed volume
- ☐ Fixed shape and volume
- ☐ No fixed shape or volume
- ☐ Fixed shape but no volume

Answer: No fixed shape but fixed volume

2. Liquids are called fluids because they can?

- ☐ Flow
- ☐ Freeze
- ☐ Evaporate
- ☐ Solidify

Answer: Flow

3. Rate of diffusion of liquids is higher than solids because?

- ☐ Particles move freely and have space
- ☐ Particles are fixed
- ☐ Particles are very small
- ☐ Liquids are hot

Answer: Particles move freely and have space

4. Aquatic animals breathe oxygen dissolved in?

- ☐ Water
- ☐ Air
- ☐ Soil
- ☐ Sand

Answer: Water

5. Liquids take the shape of?

- ☐ The container
- ☐ A cube
- ☐ A sphere
- ☐ Nothing

Answer: The container

The Gaseous State

1. Gases are highly?

- ☐ Compressible
- ☐ Rigid
- ☐ Fixed
- ☐ Heavy

Answer: Compressible

2. CNG stands for?

- ☐ Compressed Natural Gas
- ☐ Common Natural Gas
- ☐ Clean Natural Gas
- ☐ Cold Natural Gas

Answer: Compressed Natural Gas

3. Gases diffuse very fast because of?

- ☐ High speed of particles and large space
- ☐ Low speed
- ☐ Small space
- ☐ High density

Answer: High speed of particles and large space

4. Pressure of a gas is due to?

- ☐ Force exerted by particles on walls
- ☐ Weight of gas
- ☐ Volume of container
- ☐ Temperature

Answer: Force exerted by particles on walls

5. LPG is used for?

- ☐ Cooking
- ☐ Cleaning
- ☐ Painting
- ☐ Drinking

Answer: Cooking

Can Matter Change its State?

1. Water exists in how many states?

- ☐ Three
- ☐ Two
- ☐ One
- ☐ Four

Answer: Three

2. The process of melting is also called?

- ☐ Fusion
- ☐ Fission
- ☐ Sublimation
- ☐ Vaporisation

Answer: Fusion

3. The temperature at which a solid melts is called?

- ☐ Melting point
- ☐ Boiling point
- ☐ Freezing point
- ☐ Condensation point

Answer: Melting point

4. Melting point is an indication of?

- ☐ Strength of force of attraction
- ☐ Weight of solid
- ☐ Volume of solid
- ☐ Color of solid

Answer: Strength of force of attraction

5. Melting point of ice is?

- ☐ 273.15 K
- ☐ 100 K
- ☐ 0 K
- ☐ 373 K

Answer: 273.15 K

Latent Heat

1. Latent heat means?

- ☐ Hidden heat
- ☐ High heat
- ☐ Low heat
- ☐ Lost heat

Answer: Hidden heat

2. Temperature during melting?

- ☐ Remains constant
- ☐ Increases
- ☐ Decreases
- ☐ Fluctuates

Answer: Remains constant

3. Heat required to change 1 kg solid to liquid at melting point is?

- ☐ Latent heat of fusion
- ☐ Latent heat of vaporisation
- ☐ Specific heat
- ☐ Boiling heat

Answer: Latent heat of fusion

4. Boiling point of water is?

- ☐ 373 K
- ☐ 273 K
- ☐ 100 K
- ☐ 0 K

Answer: 373 K

5. Particles in steam have more energy than water at 100°C because of?

- ☐ Latent heat of vaporisation
- ☐ Latent heat of fusion
- ☐ Kinetic energy
- ☐ Potential energy

Answer: Latent heat of vaporisation

Sublimation

1. Change of solid directly to gas is called?

- ☐ Sublimation
- ☐ Evaporation
- ☐ Condensation
- ☐ Fusion

Answer: Sublimation

2. Change of gas directly to solid is called?

- ☐ Deposition
- ☐ Sublimation
- ☐ Solidification
- ☐ Freezing

Answer: Deposition

3. Which substance undergoes sublimation?

- ☐ Camphor
- ☐ Ice
- ☐ Iron
- ☐ Wax

Answer: Camphor

4. Does sublimation involve the liquid state?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only at high pressure

Answer: No

5. Solid CO₂ is also known as?

- ☐ Dry ice
- ☐ Wet ice
- ☐ Hard ice
- ☐ Gas ice

Answer: Dry ice

Effect of Change of Pressure

1. Gases can be liquefied by?

- ☐ Applying pressure and reducing temperature
- ☐ Reducing pressure
- ☐ Increasing temperature
- ☐ Adding water

Answer: Applying pressure and reducing temperature

2. What happens to particles when pressure is applied?

- ☐ They come closer
- ☐ They move apart
- ☐ They stop moving
- ☐ They disappear

Answer: They come closer

3. 1 atmosphere (atm) is a unit of?

- ☐ Pressure
- ☐ Temperature
- ☐ Volume
- ☐ Mass

Answer: Pressure

4. Solid CO₂ converts to gas at?

- ☐ 1 atmosphere pressure
- ☐ 10 atmosphere pressure
- ☐ 0 atmosphere pressure
- ☐ 100 atmosphere pressure

Answer: 1 atmosphere pressure

5. State of matter is determined by?

- ☐ Temperature and Pressure
- ☐ Volume only
- ☐ Mass only
- ☐ Color

Answer: Temperature and Pressure

Evaporation

1. Evaporation is a?

- ☐ Surface phenomenon
- ☐ Bulk phenomenon
- ☐ Chemical reaction
- ☐ Nuclear reaction

Answer: Surface phenomenon

2. Evaporation occurs at?

- ☐ Any temperature below boiling point
- ☐ Only at boiling point
- ☐ Only at freezing point
- ☐ Above boiling point

Answer: Any temperature below boiling point

3. Boiling is a?

- ☐ Bulk phenomenon
- ☐ Surface phenomenon
- ☐ Slow process
- ☐ Cooling process

Answer: Bulk phenomenon

4. During evaporation, particles gain energy from?

- ☐ Surroundings
- ☐ Nucleus
- ☐ Vacuum
- ☐ None

Answer: Surroundings

5. Particles escaping during evaporation have?

- ☐ Higher kinetic energy
- ☐ Lower kinetic energy
- ☐ Zero energy
- ☐ No mass

Answer: Higher kinetic energy

Factors Affecting Evaporation

1. Rate of evaporation increases with?

- ☐ Increase in surface area
- ☐ Decrease in surface area
- ☐ Decrease in temperature
- ☐ Increase in humidity

Answer: Increase in surface area

2. Increase in wind speed causes evaporation to?

- ☐ Increase
- ☐ Decrease
- ☐ Stop
- ☐ Remain same

Answer: Increase

3. Increase in humidity causes evaporation to?

- ☐ Decrease
- ☐ Increase
- ☐ Stop
- ☐ Fluctuate

Answer: Decrease

4. Why do we spread clothes to dry?

- ☐ To increase surface area
- ☐ To decrease surface area
- ☐ To warm them
- ☐ To clean them

Answer: To increase surface area

5. Higher temperature leads to?

- ☐ More particles having enough kinetic energy
- ☐ Freezing
- ☐ Condensation
- ☐ Less kinetic energy

Answer: More particles having enough kinetic energy

How Does Evaporation Cause Cooling?

1. Evaporation causes?

- ☐ Cooling
- ☐ Heating
- ☐ Melting
- ☐ Burning

Answer: Cooling

2. Acetone on palm feels cool because?

- ☐ Particles gain energy from palm and evaporate
- ☐ Acetone is ice cold
- ☐ Acetone is a solid
- ☐ Palm is hot

Answer: Particles gain energy from palm and evaporate

3. Cotton clothes are worn in summer because?

- ☐ They absorb sweat and allow evaporation
- ☐ They are synthetic
- ☐ They are thick
- ☐ They are waterproof

Answer: They absorb sweat and allow evaporation

4. Water droplets on cold glass surface are due to?

- ☐ Condensation of water vapour
- ☐ Evaporation of water
- ☐ Melting of glass
- ☐ Freezing of air

Answer: Condensation of water vapour

5. Earthen pots keep water cool due to?

- ☐ Evaporation through pores
- ☐ Insulation
- ☐ Freezing
- ☐ Boiling

Answer: Evaporation through pores

Summary of States of Matter

1. Forces of attraction are maximum in?

- ☐ Solids
- ☐ Liquids
- ☐ Gases
- ☐ Plasma

Answer: Solids

2. Kinetic energy is maximum in?

- ☐ Gases
- ☐ Liquids
- ☐ Solids
- ☐ Ice

Answer: Gases

3. Spaces between particles are maximum in?

- ☐ Gases
- ☐ Liquids
- ☐ Solids
- ☐ Stones

Answer: Gases

4. Order of particles is most regular in?

- ☐ Solids
- ☐ Liquids
- ☐ Gases
- ☐ Steam

Answer: Solids

5. States of matter are?

- ☐ Inter-convertible
- ☐ Fixed
- ☐ Permanent
- ☐ Unchangeable

Answer: Inter-convertible

Chapter 2: Is Matter Around Us Pure?

Is Matter Around Us Pure?

1. What does 'pure' mean to a scientist?

- ☐ All constituent particles are the same chemically
- ☐ No adulteration
- ☐ Clear liquid
- ☐ Expensive

Answer: All constituent particles are the same chemically

2. Milk is a?

- ☐ Mixture
- ☐ Pure substance
- ☐ Element
- ☐ Compound

Answer: Mixture

3. A pure substance consists of?

- ☐ Single type of particle
- ☐ Two types of particles
- ☐ Variable particles
- ☐ Any particle

Answer: Single type of particle

4. Most matter around us exists as?

- ☐ Mixtures
- ☐ Pure elements
- ☐ Pure compounds
- ☐ Atoms

Answer: Mixtures

5. Which of these is NOT a pure substance?

- ☐ Soil
- ☐ Iron
- ☐ Gold
- ☐ Oxygen

Answer: Soil

What is a Mixture?

1. Mixtures are constituted by?

- ☐ More than one kind of pure form of matter
- ☐ Single element
- ☐ Single compound
- ☐ Only atoms

Answer: More than one kind of pure form of matter

2. Can sodium chloride be separated from water by physical process?

- ☐ Yes, by evaporation
- ☐ No
- ☐ Only by chemical reaction
- ☐ Only by filtration

Answer: Yes, by evaporation

3. Is sodium chloride a pure substance?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ It is a mixture

Answer: Yes

4. Soft drink is a?

- ☐ Mixture
- ☐ Pure substance
- ☐ Element
- ☐ Compound

Answer: Mixture

5. A mixture contains?

- ☐ More than one pure substance
- ☐ Only one pure substance
- ☐ Only elements
- ☐ Only compounds

Answer: More than one pure substance

Types of Mixtures

1. Mixtures with uniform composition are called?

- ☐ Homogeneous
- ☐ Heterogeneous
- ☐ Suspensions
- ☐ Colloids

Answer: Homogeneous

2. Mixtures with non-uniform composition are called?

- ☐ Heterogeneous
- ☐ Homogeneous
- ☐ Solutions
- ☐ Alloys

Answer: Heterogeneous

3. Salt dissolved in water is an example of?

- ☐ Homogeneous mixture
- ☐ Heterogeneous mixture
- ☐ Compound
- ☐ Element

Answer: Homogeneous mixture

4. Oil and water is an example of?

- ☐ Heterogeneous mixture
- ☐ Homogeneous mixture
- ☐ Solution
- ☐ Alloy

Answer: Heterogeneous mixture

5. Can a homogeneous mixture have variable composition?

- ☐ Yes
- ☐ No
- ☐ Only if heated
- ☐ Never

Answer: Yes

What is a Solution?

1. A solution is a?

- ☐ Homogeneous mixture
- ☐ Heterogeneous mixture
- ☐ Compound
- ☐ Element

Answer: Homogeneous mixture

2. The component present in larger amount in a solution is?

- ☐ Solvent
- ☐ Solute
- ☐ Particle
- ☐ Gas

Answer: Solvent

3. The component dissolved in the solvent is?

- ☐ Solute
- ☐ Solvent
- ☐ Mixture
- ☐ Solution

Answer: Solute

4. Air is a mixture of?

- ☐ Gas in gas
- ☐ Solid in gas
- ☐ Liquid in gas
- ☐ Solid in liquid

Answer: Gas in gas

5. Tincture of iodine contains?

- ☐ Iodine in alcohol
- ☐ Iodine in water
- ☐ Alcohol in iodine
- ☐ Sugar in water

Answer: Iodine in alcohol

Properties of a Solution

1. Can solution particles be seen by naked eyes?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only in sunlight

Answer: No

2. Do solution particles scatter a beam of light?

- ☐ No
- ☐ Yes
- ☐ Only when hot
- ☐ Only when concentrated

Answer: No

3. Is the path of light visible in a solution?

- ☐ No
- ☐ Yes
- ☐ Maybe
- ☐ Only for coloured solutions

Answer: No

4. Is a solution stable?

- ☐ Yes
- ☐ No
- ☐ Only temporarily
- ☐ Depends on container

Answer: Yes

5. Can solute particles be separated by filtration?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only large particles

Answer: No

Concentration of a Solution

1. A solution that has dissolved as much solute as it can is called?

- ☐ Saturated
- ☐ Unsaturated
- ☐ Dilute
- ☐ Concentrated

Answer: Saturated

2. The amount of solute present in a saturated solution is its?

- ☐ Solubility
- ☐ Concentration
- ☐ Volume
- ☐ Mass

Answer: Solubility

3. If amount of solute is less than saturation level, it is?

- ☐ Unsaturated
- ☐ Saturated
- ☐ Supersaturated
- ☐ Suspension

Answer: Unsaturated

4. Concentration is the amount of solute in?

- ☐ Given amount of solution
- ☐ Given amount of solvent
- ☐ Total mass
- ☐ Total volume

Answer: Given amount of solution

5. Solubility changes with?

- ☐ Temperature
- ☐ Pressure
- ☐ Time
- ☐ Container

Answer: Temperature

What is a Suspension?

1. A suspension is a?

- ☐ Heterogeneous mixture
- ☐ Homogeneous mixture
- ☐ Solution
- ☐ Colloid

Answer: Heterogeneous mixture

2. Are particles of suspension visible to naked eye?

- ☐ Yes
- ☐ No
- ☐ Only with microscope
- ☐ Only in dark

Answer: Yes

3. In suspension, solute particles?

- ☐ Remain suspended
- ☐ Dissolve
- ☐ Evaporate
- ☐ Disappear

Answer: Remain suspended

4. Chalk powder in water is an example of?

- ☐ Suspension
- ☐ Solution
- ☐ Colloid
- ☐ Solvent

Answer: Suspension

5. Solids dispersed in liquids form?

- ☐ Suspensions
- ☐ Solutions
- ☐ Gases
- ☐ Pure substances

Answer: Suspensions

Properties of a Suspension

1. Do suspension particles scatter light?

- ☐ Yes
- ☐ No
- ☐ Only when settled
- ☐ Only when filtered

Answer: Yes

2. Is the path of light visible in a suspension?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ Never

Answer: Yes

3. Is a suspension stable?

- ☐ No, particles settle down
- ☐ Yes, always
- ☐ Yes, if stirred
- ☐ Yes, if heated

Answer: No, particles settle down

4. Can suspension particles be separated by filtration?

- ☐ Yes
- ☐ No
- ☐ Only by evaporation
- ☐ Only by boiling

Answer: Yes

5. When particles settle, does suspension scatter light?

- ☐ No
- ☐ Yes
- ☐ More than before
- ☐ Same as before

Answer: No

What is a Colloidal Solution?

1. A colloid appears homogeneous but is actually?

- ☐ Heterogeneous
- ☐ Homogeneous
- ☐ Pure
- ☐ Element

Answer: Heterogeneous

2. Milk is an example of?

- ☐ Colloid
- ☐ Suspension
- ☐ True solution
- ☐ Pure substance

Answer: Colloid

3. Scattering of light by colloidal particles is called?

- ☐ Tyndall effect
- ☐ Reflection
- ☐ Refraction
- ☐ Dispersion

Answer: Tyndall effect

4. Are colloidal particles visible to naked eye?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only in light

Answer: No

5. Tyndall effect is due to?

- ☐ Scattering of light
- ☐ Absorption of light
- ☐ Transmission of light
- ☐ Reflection of light

Answer: Scattering of light

Properties of a Colloid

1. Is a colloid stable?

- ☐ Yes, quite stable
- ☐ No, unstable
- ☐ Settles quickly
- ☐ Separates on standing

Answer: Yes, quite stable

2. Can colloids be separated by filtration?

- ☐ No
- ☐ Yes
- ☐ Easily
- ☐ Sometimes

Answer: No

3. Technique used to separate colloidal particles is?

- ☐ Centrifugation
- ☐ Filtration
- ☐ Evaporation
- ☐ Distillation

Answer: Centrifugation

4. The solute-like component in colloid is?

- ☐ Dispersed phase
- ☐ Dispersing medium
- ☐ Solvent
- ☐ Solution

Answer: Dispersed phase

5. Fog is an example of?

- ☐ Liquid in gas (Aerosol)
- ☐ Solid in gas
- ☐ Gas in liquid
- ☐ Solid in liquid

Answer: Liquid in gas (Aerosol)

Physical and Chemical Changes

1. Melting of ice is a?

- ☐ Physical change
- ☐ Chemical change
- ☐ Both
- ☐ Neither

Answer: Physical change

2. Burning of paper is a?

- ☐ Chemical change
- ☐ Physical change
- ☐ Reversible change
- ☐ State change

Answer: Chemical change

3. Physical properties include?

- ☐ Colour, hardness, density
- ☐ Flammability
- ☐ Reactivity
- ☐ Acidity

Answer: Colour, hardness, density

4. During a chemical change, we get?

- ☐ New substances
- ☐ Same substance in new state
- ☐ No change
- ☐ Mixture

Answer: New substances

5. Rusting of iron is?

- ☐ Chemical change
- ☐ Physical change
- ☐ No change
- ☐ Fast change

Answer: Chemical change

What are the Types of Pure Substances?

1. Who defined 'element'?

- ☐ Lavoisier
- ☐ Boyle
- ☐ Dalton
- ☐ Newton

Answer: Lavoisier

2. An element is?

- ☐ Basic form of matter
- ☐ Mixture
- ☐ Compound
- ☐ Solution

Answer: Basic form of matter

3. Which of these is a property of metals?

- ☐ Lustrous and ductile
- ☐ Brittle
- ☐ Poor conductor
- ☐ Non-sonorous

Answer: Lustrous and ductile

4. Mercury is a metal that is?

- ☐ Liquid at room temperature
- ☐ Gas at room temperature
- ☐ Solid at room temperature
- ☐ Plasma

Answer: Liquid at room temperature

5. Elements intermediate between metals and non-metals are?

- ☐ Metalloids
- ☐ Alloys
- ☐ Compounds
- ☐ Mixtures

Answer: Metalloids

Compounds

1. A compound is composed of?

- ☐ Two or more elements chemically combined
- ☐ Mixture of elements
- ☐ Single element
- ☐ Solutions

Answer: Two or more elements chemically combined

2. The composition of a compound is?

- ☐ Fixed
- ☐ Variable
- ☐ Random
- ☐ Changing

Answer: Fixed

3. Properties of a compound are?

- ☐ Different from constituent elements
- ☐ Same as constituent elements
- ☐ Average of elements
- ☐ None of the above

Answer: Different from constituent elements

4. Water is a?

- ☐ Compound
- ☐ Element
- ☐ Mixture
- ☐ Solution

Answer: Compound

5. Constituents of a compound can be separated by?

- ☐ Chemical reactions
- ☐ Physical methods
- ☐ Filtration
- ☐ Evaporation

Answer: Chemical reactions

Mixtures vs. Compounds

1. In a mixture, elements?

- ☐ Just mix together
- ☐ React to form new substance
- ☐ Change properties
- ☐ Bond chemically

Answer: Just mix together

2. A compound has?

- ☐ Fixed composition
- ☐ Variable composition
- ☐ Any composition
- ☐ No composition

Answer: Fixed composition

3. Constituents of a mixture can be separated by?

- ☐ Physical methods
- ☐ Chemical reactions
- ☐ Electrochemical reactions
- ☐ Nuclear reactions

Answer: Physical methods

4. Which has variable composition?

- ☐ Mixture
- ☐ Compound
- ☐ Element
- ☐ Pure substance

Answer: Mixture

5. Air is a?

- ☐ Mixture
- ☐ Compound
- ☐ Element
- ☐ Pure substance

Answer: Mixture

Chapter 3: Atoms and Molecules

Introduction to Atoms and Molecules

1. Who postulated the term 'Parmanu'?

- ☐ Maharishi Kanad
- ☐ Democritus
- ☐ Lavoisier
- ☐ Dalton

Answer: Maharishi Kanad

2. What does the Greek word 'atom' mean?

- ☐ Indivisible
- ☐ Invisible
- ☐ Tiny
- ☐ Hard

Answer: Indivisible

3. Who laid the foundation of chemical sciences?

- ☐ Antoine L. Lavoisier
- ☐ John Dalton
- ☐ Proust
- ☐ Kanad

Answer: Antoine L. Lavoisier

4. When was the idea of divisibility of matter considered in India?

- ☐ Around 500 BC
- ☐ Around 1800 AD
- ☐ Around 100 AD
- ☐ Around 2000 BC

Answer: Around 500 BC

5. Who suggested that particles normally exist in a combined form?

- ☐ Pakudha Katayama
- ☐ Democritus
- ☐ Lavoisier
- ☐ Proust

Answer: Pakudha Katayama

Law of Conservation of Mass

1. The Law of Conservation of Mass states that mass can?

- ☐ Neither be created nor destroyed
- ☐ Be created but not destroyed
- ☐ Be destroyed but not created
- ☐ Be created and destroyed

Answer: Neither be created nor destroyed

2. Who established the Law of Conservation of Mass?

- ☐ Lavoisier
- ☐ Dalton
- ☐ Proust
- ☐ Bohr

Answer: Lavoisier

3. In a chemical reaction, the total mass of reactants is?

- ☐ Equal to total mass of products
- ☐ Greater than products
- ☐ Less than products
- ☐ Variable

Answer: Equal to total mass of products

4. If 10g of A reacts with 5g of B to give C and D, the total mass of C and D is?

- ☐ 15g
- ☐ 10g
- ☐ 5g
- ☐ 20g

Answer: 15g

5. Why is a cork put on the flask during the experiment?

- ☐ To prevent matter from escaping
- ☐ To keep it warm
- ☐ To look good
- ☐ To mix solutions

Answer: To prevent matter from escaping

Law of Constant Proportions

1. This law is also known as?

- ☐ Law of Definite Proportions
- ☐ Law of Mass Action
- ☐ Law of Multiple Proportions
- ☐ Law of Conservation

Answer: Law of Definite Proportions

2. In water, the ratio of Hydrogen to Oxygen by mass is?

- ☐ 1:8
- ☐ 1:2
- ☐ 2:1
- ☐ 8:1

Answer: 1:8

3. Who stated the Law of Constant Proportions?

- ☐ Proust
- ☐ Lavoisier
- ☐ Dalton
- ☐ Kanad

Answer: Proust

4. In Ammonia (NH₃), Nitrogen and Hydrogen are in ratio?

- ☐ 14:3
- ☐ 1:3
- ☐ 3:14
- ☐ 14:1

Answer: 14:3

5. If 9g of water is decomposed, we get?

- ☐ 1g Hydrogen and 8g Oxygen
- ☐ 2g Hydrogen and 16g Oxygen
- ☐ 8g Hydrogen and 1g Oxygen
- ☐ 4.5g each

Answer: 1g Hydrogen and 8g Oxygen

Dalton's Atomic Theory

1. Dalton's theory was based on?

- ☐ Laws of chemical combination
- ☐ Law of gravity
- ☐ Atomic structure
- ☐ Electrons

Answer: Laws of chemical combination

2. According to Dalton, all matter is made of?

- ☐ Tiny particles called atoms
- ☐ Molecules
- ☐ Compounds
- ☐ Mixtures

Answer: Tiny particles called atoms

3. Which postulate explains the Law of Conservation of Mass?

- ☐ Atoms are indivisible and cannot be created/destroyed
- ☐ Atoms combine in whole numbers
- ☐ Atoms of different elements differ
- ☐ Atoms of same element are identical

Answer: Atoms are indivisible and cannot be created/destroyed

4. Atoms of a given element are identical in?

- ☐ Mass and chemical properties
- ☐ Size only
- ☐ Shape only
- ☐ Nothing

Answer: Mass and chemical properties

5. Atoms combine in the ratio of?

- ☐ Small whole numbers
- ☐ Large fractions
- ☐ Decimals
- ☐ Random numbers

Answer: Small whole numbers

What is an Atom?

1. The building blocks of all matter are?

- ☐ Atoms
- ☐ Cells
- ☐ Bricks
- ☐ Sand

Answer: Atoms

2. Atomic radius is measured in?

- ☐ Nanometres
- ☐ Metres
- ☐ Centimetres
- ☐ Kilometres

Answer: Nanometres

3. 1 nanometre is equal to?

- ☐ 10^{-9} m
- ☐ 10^{-6} m
- ☐ 10^{-3} m
- ☐ 10^{-12} m

Answer: 10^{-9} m

4. Can we see atoms with naked eyes?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only large ones

Answer: No

5. Which of these is the smallest?

- ☐ Atom of hydrogen
- ☐ Molecule of water
- ☐ Grain of sand
- ☐ Ant

Answer: Atom of hydrogen

Modern Day Symbols of Elements

1. Who was the first scientist to use symbols for elements?

- ☐ Dalton
- ☐ Lavoisier
- ☐ Bohr
- ☐ Newton

Answer: Dalton

2. Who approves names of elements?

- ☐ IUPAC
- ☐ NASA
- ☐ WHO
- ☐ UN

Answer: IUPAC

3. The symbol for Iron is derived from?

- ☐ Ferrum
- ☐ Iron
- ☐ Ferrous
- ☐ Fe

Answer: Ferrum

4. What is the symbol for Sodium?

- ☐ Na
- ☐ So
- ☐ S
- ☐ Nu

Answer: Na

5. The symbol for Gold is?

- ☐ Au
- ☐ Go
- ☐ Gd
- ☐ Ag

Answer: Au

Atomic Mass

1. The reference atom for atomic mass is?

- ☐ Carbon-12
- ☐ Oxygen-16
- ☐ Hydrogen-1
- ☐ Nitrogen-14

Answer: Carbon-12

2. One atomic mass unit (u) is equal to?

- ☐ 1/12th the mass of one C-12 atom
- ☐ Mass of one C-12 atom
- ☐ Mass of one H atom
- ☐ 1/16th mass of O atom

Answer: 1/12th the mass of one C-12 atom

3. What is the atomic mass of Oxygen?

- ☐ 16 u
- ☐ 8 u
- ☐ 12 u
- ☐ 14 u

Answer: 16 u

4. What is the atomic mass of Hydrogen?

- ☐ 1 u
- ☐ 2 u
- ☐ 12 u
- ☐ 16 u

Answer: 1 u

5. Relative atomic mass is defined as?

- ☐ Average mass of the atom compared to C-12
- ☐ Absolute mass
- ☐ Weight of atom
- ☐ Mass of nucleus

Answer: Average mass of the atom compared to C-12

How Do Atoms Exist?

1. Can atoms of most elements exist independently?

- ☐ No
- ☐ Yes
- ☐ Always
- ☐ Only noble gases

Answer: No

2. Atoms form?

- ☐ Molecules and ions
- ☐ Only molecules
- ☐ Only ions
- ☐ Nothing

Answer: Molecules and ions

3. Molecules and ions aggregate to form?

- ☐ Matter
- ☐ Energy
- ☐ Space
- ☐ Time

Answer: Matter

4. Which atoms can exist independently?

- ☐ Noble gases (e.g., Helium)
- ☐ Oxygen
- ☐ Hydrogen
- ☐ Nitrogen

Answer: Noble gases (e.g., Helium)

5. Why do atoms form molecules?

- ☐ To become stable
- ☐ To become unstable
- ☐ To increase mass
- ☐ To decrease size

Answer: To become stable

What is a Molecule?

1. A molecule is a group of atoms held together by?

- ☐ Chemical bonds
- ☐ Gravity
- ☐ Magnetism
- ☐ Glue

Answer: Chemical bonds

2. A molecule is capable of?

- ☐ Independent existence
- ☐ Breathing
- ☐ Moving
- ☐ Dividing

Answer: Independent existence

3. Can a molecule contain atoms of different elements?

- ☐ Yes
- ☐ No
- ☐ Never
- ☐ Only if heated

Answer: Yes

4. What is the smallest particle of a compound?

- ☐ Molecule
- ☐ Atom
- ☐ Ion
- ☐ Electron

Answer: Molecule

5. Does a molecule show properties of the substance?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ Only in gas

Answer: Yes

Molecules of Elements

1. Molecules of elements contain?

- ☐ Same type of atoms
- ☐ Different atoms
- ☐ Ions
- ☐ Mixtures

Answer: Same type of atoms

2. The number of atoms in a molecule is called?

- ☐ Atomicity
- ☐ Valency
- ☐ Atomic mass
- ☐ Molecular weight

Answer: Atomicity

3. What is the atomicity of Oxygen?

- ☐ Diatomic
- ☐ Monoatomic
- ☐ Triatomic
- ☐ Polyatomic

Answer: Diatomic

4. Ozone (O₃) is?

- ☐ Triatomic
- ☐ Diatomic
- ☐ Monoatomic
- ☐ Tetra-atomic

Answer: Triatomic

5. Phosphorus (P₄) is?

- ☐ Tetra-atomic
- ☐ Diatomic
- ☐ Monoatomic
- ☐ Polyatomic

Answer: Tetra-atomic

Molecules of Compounds

1. Molecules of compounds contain?

- ☐ Atoms of different elements
- ☐ Atoms of same element
- ☐ Only ions
- ☐ Only metals

Answer: Atoms of different elements

2. In NH₃ (Ammonia), the elements are?

- ☐ Nitrogen and Hydrogen
- ☐ Nitrogen and Helium
- ☐ Nickel and Hydrogen
- ☐ Neon and Hydrogen

Answer: Nitrogen and Hydrogen

3. The ratio by mass in CO₂ is?

- ☐ 3:8
- ☐ 1:2
- ☐ 12:16
- ☐ 1:1

Answer: 3:8

4. Water is a molecule of?

- ☐ Compound
- ☐ Element
- ☐ Mixture
- ☐ Ion

Answer: Compound

5. Atoms in a compound are combined in?

- ☐ Definite proportions
- ☐ Random proportions
- ☐ Variable proportions
- ☐ No proportions

Answer: Definite proportions

What is an Ion?

1. An ion is a?

- ☐ Charged species
- ☐ Neutral atom
- ☐ Molecule
- ☐ Compound

Answer: Charged species

2. A positively charged ion is called?

- ☐ Cation
- ☐ Anion
- ☐ Atom
- ☐ Molecule

Answer: Cation

3. A negatively charged ion is called?

- ☐ Anion
- ☐ Cation
- ☐ Positron
- ☐ Electron

Answer: Anion

4. A group of atoms carrying a charge is?

- ☐ Polyatomic ion
- ☐ Monoatomic ion
- ☐ Molecule
- ☐ Compound

Answer: Polyatomic ion

5. In NaCl, the cation is?

- ☐ Sodium (Na^+)
- ☐ Chloride (Cl^-)
- ☐ Both
- ☐ None

Answer: Sodium (Na^+)

Writing Chemical Formulae

1. Combining power of an element is called?

- ☐ Valency
- ☐ Atomicity
- ☐ Atomic number
- ☐ Mass

Answer: Valency

2. In a formula, valencies must?

- ☐ Balance
- ☐ Be equal
- ☐ Be zero
- ☐ Be negative

Answer: Balance

3. When writing formula for metal and non-metal, which comes first?

- ☐ Metal
- ☐ Non-metal
- ☐ Any
- ☐ Heavier one

Answer: Metal

4. Polyatomic ions are enclosed in?

- ☐ Brackets
- ☐ Quotes
- ☐ Commas
- ☐ Spaces

Answer: Brackets

5. The formula for Magnesium Hydroxide is?

- ☐ $\text{Mg}(\text{OH})_2$
- ☐ MgOH_2
- ☐ Mg_2OH
- ☐ MgO_2H_2

Answer: $\text{Mg}(\text{OH})_2$

Formulae of Simple Compounds

1. Formula of Hydrogen Chloride is?

- ☐ HCl
- ☐ H_2Cl
- ☐ HCl_2
- ☐ HCL

Answer: HCl

2. Formula of Aluminium Oxide is?

- ☐ Al_2O_3
- ☐ AlO
- ☐ Al_3O_2
- ☐ AlO_3

Answer: Al_2O_3

3. Formula of Sodium Nitrate is?

- ☐ NaNO_3
- ☐ Na_2NO_3
- ☐ $\text{Na}(\text{NO}_3)_2$
- ☐ Na_3N

Answer: NaNO_3

4. Formula of Calcium Oxide is?

- ☐ CaO
- ☐ Ca₂O₂
- ☐ Ca₂O
- ☐ CaO₂

Answer: CaO

5. In MgCl₂, the valency of Mg is?

- ☐ 2
- ☐ 1
- ☐ 3
- ☐ 0

Answer: 2

Molecular Mass

1. Molecular mass is the sum of?

- ☐ Atomic masses of all atoms
- ☐ Atomic numbers
- ☐ Valencies
- ☐ Electrons

Answer: Atomic masses of all atoms

2. Molecular mass of H₂O is?

- ☐ 18 u
- ☐ 16 u
- ☐ 20 u
- ☐ 10 u

Answer: 18 u

3. Formula unit mass is used for?

- ☐ Ionic compounds
- ☐ Elements
- ☐ Gases
- ☐ Liquids

Answer: Ionic compounds

4. Mass of one mole of a substance is called?

- ☐ Molar mass
- ☐ Atomic mass
- ☐ Molecular mass
- ☐ Unit mass

Answer: Molar mass

5. Molecular mass of NaCl (Na=23, Cl=35.5) is?

- ☐ 58.5 u
- ☐ 58 u
- ☐ 23 u
- ☐ 35.5 u

Answer: 58.5 u

Chapter 4: Structure of the Atom

Introduction to Structure of Atom

1. What are the fundamental building blocks of matter?

- ☐ Atoms and molecules
- ☐ Cells
- ☐ Tissues
- ☐ Organs

Answer: Atoms and molecules

2. Did Dalton propose that atoms are indivisible?

- ☐ Yes
- ☐ No
- ☐ Maybe
- ☐ Only for gases

Answer: Yes

3. Are atoms really indivisible?

- ☐ No, they have smaller constituents
- ☐ Yes, absolutely
- ☐ Only hydrogen atoms
- ☐ Only metal atoms

Answer: No, they have smaller constituents

4. What makes atoms of different elements different?

- ☐ Different constituents
- ☐ Color
- ☐ Smell
- ☐ Taste

Answer: Different constituents

5. When did scientists face the challenge of revealing atom structure?

- ☐ End of 19th century
- ☐ End of 20th century
- ☐ Beginning of 18th century
- ☐ Middle of 19th century

Answer: End of 19th century

Charged Particles in Matter

1. What happens when you rub a glass rod with silk?

- ☐ It becomes electrically charged
- ☐ It melts
- ☐ It breaks
- ☐ Nothing

Answer: It becomes electrically charged

2. Where does the charge come from?

- ☐ From within the atom
- ☐ From the air
- ☐ From the silk
- ☐ Magic

Answer: From within the atom

3. Is an atom divisible?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ Only in space

Answer: Yes

4. Comb attracting paper pieces is an example of?

- ☐ Static electricity
- ☐ Magnetism
- ☐ Gravity
- ☐ Friction

Answer: Static electricity

5. Charged particles indicate that atoms have?

- ☐ Internal structure
- ☐ No structure
- ☐ Hard shell
- ☐ Liquid core

Answer: Internal structure

Discovery of Sub-atomic Particles

1. Who identified the electron?

- ☐ J.J. Thomson
- ☐ E. Goldstein
- ☐ Rutherford
- ☐ Bohr

Answer: J.J. Thomson

2. Canal rays led to the discovery of?

- ☐ Proton
- ☐ Electron
- ☐ Neutron
- ☐ Nucleus

Answer: Proton

3. What is the charge of a proton?

- ☐ Positive
- ☐ Negative
- ☐ Neutral
- ☐ Variable

Answer: Positive

4. The mass of a proton is approximately ___ times that of an electron.

- ☐ 2000
- ☐ 100
- ☐ 10
- ☐ 10000

Answer: 2000

5. In general, an electron is represented as?

- ☐ e-
- ☐ p+
- ☐ n
- ☐ E

Answer: e-

The Structure of an Atom

1. Dalton's theory failed because?

- ☐ Atom is divisible
- ☐ Atom is indivisible
- ☐ Matter is continuous
- ☐ Elements are same

Answer: Atom is divisible

2. Which particles are inside the atom?

- ☐ Electrons and protons
- ☐ Only electrons
- ☐ Only protons
- ☐ Dust

Answer: Electrons and protons

3. Who was the first to propose a model for atom structure?

- ☐ J.J. Thomson
- ☐ Rutherford
- ☐ Bohr
- ☐ Dalton

Answer: J.J. Thomson

4. Understanding atom structure required?

- ☐ New models
- ☐ Better microscopes
- ☐ More elements
- ☐ Less elements

Answer: New models

5. Protons are located?

- ☐ In the interior of the atom
- ☐ On the surface
- ☐ Outside the atom
- ☐ Nowhere

Answer: In the interior of the atom

Thomson's Model of an Atom

1. Thomson compared the atom to a?

- ☐ Christmas pudding
- ☐ Solar system
- ☐ Brick wall
- ☐ Cloud

Answer: Christmas pudding

2. In Thomson's model, the positive charge is?

- ☐ Spread all over like a sphere
- ☐ Concentrated in center
- ☐ Absent
- ☐ Negative

Answer: Spread all over like a sphere

3. According to Thomson, the atom as a whole is?

- ☐ Electrically neutral
- ☐ Positively charged
- ☐ Negatively charged
- ☐ Unstable

Answer: Electrically neutral

4. Electrons in Thomson's model are like?

- ☐ Seeds in a watermelon
- ☐ Planets around sun
- ☐ Birds in sky
- ☐ Fish in water

Answer: Seeds in a watermelon

5. Did Thomson's model explain experimental results of other scientists?

- ☐ No
- ☐ Yes
- ☐ Perfectly
- ☐ Mostly

Answer: No

Rutherford's Model of an Atom

1. Rutherford used which particles for his experiment?

- ☐ Alpha particles
- ☐ Beta particles
- ☐ Gamma rays
- ☐ X-rays

Answer: Alpha particles

2. He selected a foil made of?

- ☐ Gold
- ☐ Silver
- ☐ Aluminium
- ☐ Copper

Answer: Gold

3. Most alpha particles?

- ☐ Passed straight through
- ☐ Deflected back
- ☐ Stopped
- ☐ Disappeared

Answer: Passed straight through

4. The positively charged centre is called?

- ☐ Nucleus
- ☐ Orbit
- ☐ Shell
- ☐ Proton

Answer: Nucleus

5. The size of the nucleus is ___ compared to the atom.

- ☐ Very small
- ☐ Very large
- ☐ Equal
- ☐ Half

Answer: Very small

Drawbacks of Rutherford's Model

1. A particle in circular orbit would undergo?

- ☐ Acceleration
- ☐ Deceleration
- ☐ Rest
- ☐ Linear motion

Answer: Acceleration

2. During acceleration, charged particles?

- ☐ Radiate energy
- ☐ Gain energy
- ☐ Stop moving
- ☐ Become neutral

Answer: Radiate energy

3. If Rutherford's model was fully correct, atoms would be?

- ☐ Unstable
- ☐ Stable
- ☐ Invisible
- ☐ Solid

Answer: Unstable

4. The revolving electron would eventually?

- ☐ Fall into the nucleus
- ☐ Escape the atom
- ☐ Stop moving
- ☐ Grow larger

Answer: Fall into the nucleus

5. Are atoms actually stable?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ Only in gas

Answer: Yes

Bohr's Model of Atom

1. Bohr proposed that electrons revolve in?

- ☐ Discrete orbits
- ☐ Random paths
- ☐ Nucleus
- ☐ Straight lines

Answer: Discrete orbits

2. While revolving in discrete orbits, electrons?

- ☐ Do not radiate energy
- ☐ Radiate energy
- ☐ Lose mass
- ☐ Gain charge

Answer: Do not radiate energy

3. These orbits are also called?

- ☐ Energy levels
- ☐ Roads
- ☐ Tracks
- ☐ Waves

Answer: Energy levels

4. Which letter represents the first shell?

- ☐ K
- ☐ L
- ☐ M
- ☐ N

Answer: K

5. Bohr's model explained the?

- ☐ Stability of the atom
- ☐ Color of atom
- ☐ Weight of atom
- ☐ Speed of atom

Answer: Stability of the atom

Neutrons

1. Who discovered the neutron?

- ☐ J. Chadwick
- ☐ Bohr
- ☐ Rutherford
- ☐ Thomson

Answer: J. Chadwick

2. Neutrons have?

- ☐ No charge
- ☐ Positive charge
- ☐ Negative charge
- ☐ Variable charge

Answer: No charge

3. Mass of a neutron is nearly equal to?

- ☐ Proton
- ☐ Electron
- ☐ Alpha particle
- ☐ Atom

Answer: Proton

4. Neutrons are present in the nucleus of all atoms except?

- ☐ Hydrogen
- ☐ Helium
- ☐ Carbon
- ☐ Oxygen

Answer: Hydrogen

5. Mass of an atom is sum of?

- ☐ Protons and neutrons
- ☐ Electrons and protons
- ☐ Electrons and neutrons
- ☐ Only protons

Answer: Protons and neutrons

Distribution of Electrons

1. The maximum number of electrons in a shell is given by?

- ☐ $2n^2$
- ☐ n^2
- ☐ $2n$
- ☐ n

Answer: $2n^2$

2. Max electrons in K shell ($n=1$) is?

- ☐ 2
- ☐ 8
- ☐ 18
- ☐ 1

Answer: 2

3. Max electrons in L shell ($n=2$) is?

- ☐ 8
- ☐ 2
- ☐ 18
- ☐ 32

Answer: 8

4. The outermost shell can hold a maximum of?

- ☐ 8 electrons
- ☐ 18 electrons
- ☐ 2 electrons
- ☐ 32 electrons

Answer: 8 electrons

5. Shells are filled in a?

- ☐ Step-wise manner
- ☐ Random manner
- ☐ Reverse manner
- ☐ Fast manner

Answer: Step-wise manner

Valency

1. Electrons in the outermost shell are called?

- ☐ Valence electrons
- ☐ Core electrons
- ☐ Free electrons
- ☐ Nuclear electrons

Answer: Valence electrons

2. Combining capacity of an atom is?

- ☐ Valency
- ☐ Atomicity
- ☐ Atomic mass
- ☐ Atomic number

Answer: Valency

3. An outermost shell with 8 electrons possesses?

- ☐ An octet
- ☐ A doublet
- ☐ A triplet
- ☐ Zero

Answer: An octet

4. If an atom has 1 electron in outermost shell, its valency is?

- ☐ 1
- ☐ 7
- ☐ 0
- ☐ 8

Answer: 1

5. If an atom has 7 electrons in outermost shell, its valency is?

- ☐ 1
- ☐ 7
- ☐ 8
- ☐ 0

Answer: 1

Atomic Number

1. Atomic number is denoted by?

- ☐ Z
- ☐ A
- ☐ N
- ☐ X

Answer: Z

2. Atomic number is equal to?

- ☐ Number of protons
- ☐ Number of neutrons
- ☐ Number of electrons
- ☐ Mass number

Answer: Number of protons

3. Elements are defined by?

- ☐ Number of protons
- ☐ Number of neutrons
- ☐ Mass
- ☐ Valency

Answer: Number of protons

4. Atomic number of Carbon is?

- ☐ 6
- ☐ 12
- ☐ 14
- ☐ 1

Answer: 6

5. Do all atoms of an element have the same atomic number?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ Only isotopes

Answer: Yes

Mass Number

1. Mass number is denoted by?

- ☐ A
- ☐ Z
- ☐ M
- ☐ N

Answer: A

2. Mass number is the sum of?

- ☐ Protons and neutrons
- ☐ Protons and electrons
- ☐ Neutrons and electrons
- ☐ Only protons

Answer: Protons and neutrons

3. Protons and neutrons are collectively called?

- ☐ Nucleons
- ☐ Electrons
- ☐ Isotopes
- ☐ Ions

Answer: Nucleons

4. Mass of Carbon (6 protons + 6 neutrons) is?

- ☐ 12 u
- ☐ 6 u
- ☐ 18 u
- ☐ 0 u

Answer: 12 u

5. Where does the mass of an atom reside?

- ☐ Nucleus
- ☐ Shells
- ☐ Electrons
- ☐ Space

Answer: Nucleus

Isotopes

1. Isotopes have same atomic number but different?

- ☐ Mass numbers
- ☐ Protons
- ☐ Electrons
- ☐ Chemical properties

Answer: Mass numbers

2. Protium, Deuterium, and Tritium are isotopes of?

- ☐ Hydrogen
- ☐ Carbon
- ☐ Oxygen
- ☐ Chlorine

Answer: Hydrogen

3. Chemical properties of isotopes are?

- ☐ Similar
- ☐ Different
- ☐ Opposite
- ☐ None

Answer: Similar

4. Isotope of Uranium is used in?

- ☐ Nuclear reactors
- ☐ Treating cancer
- ☐ Treating goitre
- ☐ Fertilizers

Answer: Nuclear reactors

5. Isotope of Iodine is used for?

- ☐ Treating goitre
- ☐ Treating cancer
- ☐ Fuel
- ☐ Dating

Answer: Treating goitre

Isobars

1. Isobars have same mass number but different?

- ☐ Atomic numbers
- ☐ Neutrons
- ☐ Protons
- ☐ All of the above

Answer: All of the above

2. Calcium (20) and Argon (18) are?

- ☐ Isobars
- ☐ Isotopes
- ☐ Isomers
- ☐ Allotropes

Answer: Isobars

3. Do isobars belong to the same element?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Always

Answer: No

4. Isobars have different?

- ☐ Chemical properties
- ☐ Mass number
- ☐ Nucleon number
- ☐ Nothing

Answer: Chemical properties

5. Mass number of Calcium and Argon pair is?

- ☐ 40
- ☐ 20
- ☐ 18
- ☐ 38

Answer: 40

Chapter 5: The Fundamental Unit of Life

The Fundamental Unit of Life

1. Who first discovered cells?

- ☐ Robert Hooke
- ☐ Robert Brown
- ☐ Leeuwenhoek
- ☐ Schleiden

Answer: Robert Hooke

2. What is the Latin word for 'a little room'?

- ☐ Cell
- ☐ Nucleus
- ☐ Organelle
- ☐ Cytoplasm

Answer: Cell

3. Who proposed that all cells arise from pre-existing cells?

- ☐ Virchow
- ☐ Schwann
- ☐ Schleiden
- ☐ Hooke

Answer: Virchow

4. When was the electron microscope discovered?

- ☐ 1940
- ☐ 1665
- ☐ 1831
- ☐ 1855

Answer: 1940

5. Who discovered the nucleus in the cell?

- ☐ Robert Brown
- ☐ Robert Hooke
- ☐ Purkinje
- ☐ Leeuwenhoek

Answer: Robert Brown

What are Living Organisms Made Up of?

1. Organisms made of a single cell are called?

- ☐ Unicellular
- ☐ Multicellular
- ☐ Prokaryotic
- ☐ Eukaryotic

Answer: Unicellular

2. Which of the following is a unicellular organism?

- ☐ Amoeba
- ☐ Fungi
- ☐ Plants
- ☐ Animals

Answer: Amoeba

3. What is the specific function of nerve cells related to?

- ☐ Shape
- ☐ Size
- ☐ Color
- ☐ Smell

Answer: Shape

4. What are the specific components within a cell known as?

- ☐ Cell organelles
- ☐ Organs
- ☐ Tissues
- ☐ Molecules

Answer: Cell organelles

5. Where is division of labour seen?

- ☐ Both in multicellular organisms and within a single cell
- ☐ Only in multicellular organisms
- ☐ Only within a single cell
- ☐ None of the above

Answer: Both in multicellular organisms and within a single cell

What is a Cell Made Up of?

1. What are the three features in almost every cell?

- ☐ Plasma membrane, nucleus and cytoplasm
- ☐ Cell wall, nucleus and cytoplasm
- ☐ Plasma membrane, cell wall and nucleus
- ☐ Plasma membrane, cell wall and cytoplasm

Answer: Plasma membrane, nucleus and cytoplasm

2. What is the jelly-like substance that fills the cell?

- ☐ Cytoplasm
- ☐ Protoplasm
- ☐ Nucleoplasm
- ☐ Endoplasm

Answer: Cytoplasm

3. What is the large, centrally located spherical component of the cell?

- ☐ Nucleus
- ☐ Vacuole
- ☐ Plastid
- ☐ Mitochondrion

Answer: Nucleus

4. What is the outermost covering of the cell?

- ☐ Plasma membrane
- ☐ Cell wall
- ☐ Nuclear membrane
- ☐ Cytoskeleton

Answer: Plasma membrane

5. What are the specialized structures within the cytoplasm called?

- ☐ Cell organelles
- ☐ Organs
- ☐ Tissues
- ☐ Molecules

Answer: Cell organelles

Plasma Membrane or Cell Membrane

1. The plasma membrane is called a selectively permeable membrane because:

- ☐ It allows entry and exit of some materials and prevents movement of others
- ☐ It allows entry and exit of all materials
- ☐ It prevents entry and exit of all materials
- ☐ None of the above

Answer: It allows entry and exit of some materials and prevents movement of others

2. The movement of water molecules through a selectively permeable membrane is called?

- ☐ Osmosis
- ☐ Diffusion
- ☐ Endocytosis
- ☐ Exocytosis

Answer: Osmosis

3. A cell will swell up if the surrounding solution is?

- ☐ Hypotonic
- ☐ Isotonic
- ☐ Hypertonic
- ☐ None of the above

Answer: Hypotonic

4. The process by which a cell engulfs food is known as?

- ☐ Endocytosis
- ☐ Exocytosis
- ☐ Osmosis
- ☐ Diffusion

Answer: Endocytosis

5. The plasma membrane is made up of:

- ☐ Lipids and proteins
- ☐ Carbohydrates and proteins
- ☐ Lipids and carbohydrates
- ☐ Carbohydrates and fats

Answer: Lipids and proteins

Cell Wall

1. Which cells have a cell wall?

- ☐ Plant cells
- ☐ Animal cells
- ☐ Both plant and animal cells
- ☐ None of the above

Answer: Plant cells

2. The plant cell wall is mainly composed of?

- ☐ Cellulose
- ☐ Protein
- ☐ Lipid
- ☐ Starch

Answer: Cellulose

3. The phenomenon of shrinkage of cell contents away from the cell wall is known as?

- ☐ Plasmolysis
- ☐ Osmosis
- ☐ Diffusion
- ☐ Endocytosis

Answer: Plasmolysis

4. What does the cell wall provide to plants?

- ☐ Structural strength
- ☐ Energy
- ☐ Food
- ☐ Color

Answer: Structural strength

5. The cell wall permits the cells of which organisms to withstand very dilute external media without bursting?

- ☐ Plants, fungi and bacteria
- ☐ Only plants
- ☐ Only fungi
- ☐ Only bacteria

Answer: Plants, fungi and bacteria

Nucleus

1. The nucleus has a double layered covering called?

- ☐ Nuclear membrane
- ☐ Plasma membrane
- ☐ Cell wall
- ☐ Cytoplasm

Answer: Nuclear membrane

2. Functional segments of DNA are called?

- ☐ Genes
- ☐ Chromosomes
- ☐ Chromatin
- ☐ Nucleoid

Answer: Genes

3. Organisms whose cells lack a nuclear membrane are called?

- ☐ Prokaryotes
- ☐ Eukaryotes
- ☐ Unicellular
- ☐ Multicellular

Answer: Prokaryotes

4. The undefined nuclear region in prokaryotes is called?

- ☐ Nucleoid
- ☐ Nucleus
- ☐ Chromosome
- ☐ Chromatin

Answer: Nucleoid

5. The nucleus plays a central role in?

- ☐ Cellular reproduction
- ☐ Protein synthesis
- ☐ Energy production
- ☐ Lipid synthesis

Answer: Cellular reproduction

Cytoplasm

1. The fluid content inside the plasma membrane is called?

- ☐ Cytoplasm
- ☐ Protoplasm
- ☐ Nucleoplasm
- ☐ Endoplasm

Answer: Cytoplasm

2. Which of the following is true for prokaryotes?

- ☐ Membrane-bound cell organelles are absent
- ☐ Membrane-bound cell organelles are present
- ☐ Nuclear membrane is present
- ☐ None of the above

Answer: Membrane-bound cell organelles are absent

3. Viruses lack any membranes and hence?

- ☐ Do not show characteristics of life until they enter a living body
- ☐ Show characteristics of life
- ☐ Are unicellular
- ☐ Are multicellular

Answer: Do not show characteristics of life until they enter a living body

4. The cytoplasm contains many specialised?

- ☐ Cell organelles
- ☐ Organs
- ☐ Tissues
- ☐ Molecules

Answer: Cell organelles

5. Eukaryotic cells have?

- ☐ Nuclear membrane as well as membrane-enclosed organelles
- ☐ No nuclear membrane
- ☐ No membrane-enclosed organelles
- ☐ None of the above

Answer: Nuclear membrane as well as membrane-enclosed organelles

Cell Organelles

1. Which of the following are visible only with an electron microscope?

- ☐ Some organelles
- ☐ All organelles
- ☐ No organelles
- ☐ None of the above

Answer: Some organelles

2. Which of the following is a feature of eukaryotic cells?

- ☐ Membrane-bound little structures (or 'organelles') within themselves
- ☐ No membrane-bound organelles
- ☐ A nucleoid
- ☐ None of the above

Answer: Membrane-bound little structures (or 'organelles') within themselves

3. Which of the following will we discuss as cell organelles?

- ☐ Endoplasmic reticulum, Golgi apparatus, lysosomes, mitochondria and plastids
- ☐ Only endoplasmic reticulum
- ☐ Only Golgi apparatus
- ☐ Only lysosomes

Answer: Endoplasmic reticulum, Golgi apparatus, lysosomes, mitochondria and plastids

4. The use of membrane-bound little structures is to?

- ☐ Keep the activities of different kinds separate from each other
- ☐ Mix the activities of different kinds
- ☐ Stop all activities
- ☐ None of the above

Answer: Keep the activities of different kinds separate from each other

5. Large and complex cells need a lot of chemical activities to?

- ☐ Support their complicated structure and function
- ☐ Support their simple structure and function
- ☐ Destroy their structure and function
- ☐ None of the above

Answer: Support their complicated structure and function

Endoplasmic Reticulum (ER)

1. The two types of ER are?

- ☐ Rough ER and Smooth ER
- ☐ Long ER and Short ER
- ☐ Round ER and Flat ER
- ☐ None of the above

Answer: Rough ER and Smooth ER

2. RER looks rough because of?

- ☐ Ribosomes
- ☐ Lipids
- ☐ Proteins
- ☐ Carbohydrates

Answer: Ribosomes

3. SER helps in the manufacture of?

- ☐ Fat molecules, or lipids
- ☐ Proteins
- ☐ Carbohydrates
- ☐ None of the above

Answer: Fat molecules, or lipids

4. The process of building the cell membrane is known as?

- ☐ Membrane biogenesis
- ☐ Photosynthesis
- ☐ Respiration
- ☐ Endocytosis

Answer: Membrane biogenesis

5. In the liver cells of vertebrates, which ER plays a crucial role in detoxifying many poisons and drugs?

- ☐ SER
- ☐ RER
- ☐ Both SER and RER
- ☐ None of the above

Answer: SER

Golgi Apparatus

1. The Golgi apparatus was first described by?

- ☐ Camillo Golgi
- ☐ Robert Hooke
- ☐ Robert Brown
- ☐ Leeuwenhoek

Answer: Camillo Golgi

2. The Golgi apparatus consists of a system of membrane-bound vesicles arranged in stacks called?

- ☐ Cisterns
- ☐ Vesicles
- ☐ Tubules
- ☐ Vacuoles

Answer: Cisterns

3. The Golgi apparatus is involved in the formation of?

- ☐ Lysosomes
- ☐ Ribosomes
- ☐ Mitochondria
- ☐ Plastids

Answer: Lysosomes

4. The functions of the Golgi apparatus include?

- ☐ Storage, modification and packaging of products
- ☐ Protein synthesis
- ☐ Energy production
- ☐ Lipid synthesis

Answer: Storage, modification and packaging of products

5. In the Golgi apparatus, complex sugars may be made from?

- ☐ Simple sugars
- ☐ Proteins
- ☐ Lipids
- ☐ None of the above

Answer: Simple sugars

Lysosomes

1. Lysosomes are also known as the?

- ☐ 'Suicide bags' of a cell
- ☐ 'Powerhouses' of a cell
- ☐ 'Kitchens' of a cell
- ☐ 'Control centers' of a cell

Answer: 'Suicide bags' of a cell

2. Lysosomes contain powerful?

- ☐ Digestive enzymes
- ☐ Synthetic enzymes
- ☐ Respiratory enzymes
- ☐ None of the above

Answer: Digestive enzymes

3. Lysosomes are a kind of?

- ☐ Waste disposal system of the cell
- ☐ Energy production system of the cell
- ☐ Protein synthesis system of the cell
- ☐ Lipid synthesis system of the cell

Answer: Waste disposal system of the cell

4. The enzymes in lysosomes are made by?

- ☐ RER
- ☐ SER
- ☐ Golgi apparatus
- ☐ Mitochondria

Answer: RER

5. What happens when the cell gets damaged?

- ☐ Lysosomes may burst and the enzymes digest their own cell
- ☐ Lysosomes create a new cell
- ☐ Lysosomes repair the cell
- ☐ None of the above

Answer: Lysosomes may burst and the enzymes digest their own cell

Mitochondria

1. Mitochondria are known as the?

- ☐ 'Powerhouses' of the cell
- ☐ 'Suicide bags' of a cell
- ☐ 'Kitchens' of a cell
- ☐ 'Control centers' of a cell

Answer: 'Powerhouses' of the cell

2. The energy currency of the cell is?

- ☐ ATP
- ☐ ADP
- ☐ AMP
- ☐ None of the above

Answer: ATP

3. Which organelle has its own DNA and ribosomes?

- ☐ Mitochondria
- ☐ Lysosomes
- ☐ Golgi apparatus
- ☐ ER

Answer: Mitochondria

4. The outer membrane of mitochondria is?

- ☐ Porous
- ☐ Not porous
- ☐ Deeply folded
- ☐ None of the above

Answer: Porous

5. The inner membrane of mitochondria is?

- ☐ Deeply folded
- ☐ Not folded
- ☐ Porous
- ☐ None of the above

Answer: Deeply folded

Plastids

1. Plastids are present only in?

- ☐ Plant cells
- ☐ Animal cells
- ☐ Both plant and animal cells
- ☐ None of the above

Answer: Plant cells

2. Chromoplasts that contain chlorophyll are known as?

- ☐ Chloroplasts
- ☐ Leucoplasts
- ☐ Chromoplasts
- ☐ None of the above

Answer: Chloroplasts

3. The primary function of leucoplasts is?

- ☐ Storage
- ☐ Photosynthesis
- ☐ Respiration
- ☐ Protein synthesis

Answer: Storage

4. Like mitochondria, plastids also have their own?

- ☐ DNA and ribosomes
- ☐ Only DNA
- ☐ Only ribosomes
- ☐ None of the above

Answer: DNA and ribosomes

5. Chloroplasts are important for?

- ☐ Photosynthesis in plants
- ☐ Respiration in plants
- ☐ Transpiration in plants
- ☐ None of the above

Answer: Photosynthesis in plants

Vacuoles

1. Vacuoles are?

- ☐ Storage sacs for solid or liquid contents
- ☐ Powerhouses of the cell
- ☐ Kitchens of the cell
- ☐ Control centers of the cell

Answer: Storage sacs for solid or liquid contents

2. Which cells have very large vacuoles?

- ☐ Plant cells
- ☐ Animal cells
- ☐ Both plant and animal cells
- ☐ None of the above

Answer: Plant cells

3. In plant cells, vacuoles provide?

- ☐ Turgidity and rigidity to the cell
- ☐ Energy to the cell
- ☐ Food to the cell
- ☐ Color to the cell

Answer: Turgidity and rigidity to the cell

4. In Amoeba, the food vacuole contains?

- ☐ The food items that the Amoeba has consumed
- ☐ Water
- ☐ Air
- ☐ None of the above

Answer: The food items that the Amoeba has consumed

5. Specialised vacuoles in some unicellular organisms play important roles in?

- ☐ Expelling excess water and some wastes from the cell
- ☐ Absorbing water
- ☐ Storing food
- ☐ None of the above

Answer: Expelling excess water and some wastes from the cell

Cell Division

1. The process by which new cells are made is called?

- ☐ Cell division
- ☐ Cell multiplication
- ☐ Cell addition
- ☐ Cell subtraction

Answer: Cell division

2. The two main types of cell division are?

- ☐ Mitosis and meiosis
- ☐ Mitosis and osmosis
- ☐ Meiosis and osmosis
- ☐ None of the above

Answer: Mitosis and meiosis

3. In mitosis, a mother cell divides to form how many daughter cells?

- ☐ Two
- ☐ Four
- ☐ Six
- ☐ Eight

Answer: Two

4. In meiosis, a cell divides to produce how many new cells?

- ☐ Four
- ☐ Two
- ☐ Six
- ☐ Eight

Answer: Four

5. In meiosis, the new cells have how many chromosomes compared to the mother cell?

- ☐ Half
- ☐ Same
- ☐ Double
- ☐ Triple

Answer: Half

Chapter 6: Tissues

Introduction to Tissues

1. What is a tissue?

- ☐ A group of similar cells performing a specific function
- ☐ A single cell
- ☐ An organ system
- ☐ A type of organism

Answer: A group of similar cells performing a specific function

2. Which organism carries out all functions in a single cell?

- ☐ Amoeba
- ☐ Human
- ☐ Plant
- ☐ Fish

Answer: Amoeba

3. What is division of labour?

- ☐ Different groups of cells doing specific tasks
- ☐ Cells dividing rapidly
- ☐ Cells stopping work
- ☐ None of the above

Answer: Different groups of cells doing specific tasks

4. Which of these is an example of a tissue?

- ☐ Blood
- ☐ Stomach
- ☐ Heart
- ☐ Eye

Answer: Blood

5. Why are cells grouped into tissues?

- ☐ To increase efficiency
- ☐ To look better
- ☐ To decrease size
- ☐ To stop dividing

Answer: To increase efficiency

Plants vs. Animals Tissues

1. Why do plants need supportive tissue?

- ☐ Because they are stationary and need to stand upright
- ☐ Because they move a lot
- ☐ To store food
- ☐ To absorb water

Answer: Because they are stationary and need to stand upright

2. Most plant supportive tissues consist of?

- ☐ Dead cells
- ☐ Living cells
- ☐ Muscle cells
- ☐ Nerve cells

Answer: Dead cells

3. Which organisms consume more energy?

- ☐ Animals
- ☐ Plants
- ☐ Both equally
- ☐ Neither

Answer: Animals

4. Growth in plants is limited to?

- ☐ Certain specific regions
- ☐ All over the body
- ☐ No regions
- ☐ Roots only

Answer: Certain specific regions

5. Cell growth in animals is?

- ☐ More uniform
- ☐ Localised to tips
- ☐ Non-existent
- ☐ Only in bones

Answer: More uniform

Meristematic Tissue

1. What is meristematic tissue?

- ☐ Dividing tissue
- ☐ Dead tissue
- ☐ Storage tissue
- ☐ Protective tissue

Answer: Dividing tissue

2. Where is apical meristem found?

- ☐ Growing tips of stems and roots
- ☐ Base of leaves
- ☐ Sides of the stem
- ☐ In the bark

Answer: Growing tips of stems and roots

3. Which meristem increases the girth of the stem?

- ☐ Lateral meristem
- ☐ Apical meristem
- ☐ Intercalary meristem
- ☐ None

Answer: Lateral meristem

4. Cells of meristematic tissue lack?

- ☐ Vacuoles
- ☐ Nuclei
- ☐ Cytoplasm
- ☐ Cell walls

Answer: Vacuoles

5. Intercalary meristem is located?

- ☐ Near the node
- ☐ At the root tip
- ☐ In the bark
- ☐ In the flower

Answer: Near the node

Permanent Tissue

1. What is differentiation?

- ☐ Taking up a permanent shape, size, and function
- ☐ Continuous division
- ☐ Dying of cells
- ☐ Moving of cells

Answer: Taking up a permanent shape, size, and function

2. Permanent tissues are formed from?

- ☐ Meristematic tissue
- ☐ Dead cells
- ☐ Animal cells
- ☐ None of the above

Answer: Meristematic tissue

3. Do permanent tissues divide?

- ☐ No, they have lost the ability
- ☐ Yes, rapidly
- ☐ Sometimes
- ☐ Only in winter

Answer: No, they have lost the ability

4. Differentiation leads to?

- ☐ Various types of permanent tissues
- ☐ Meristematic tissue
- ☐ Seeds
- ☐ Fruits

Answer: Various types of permanent tissues

5. Cells in permanent tissue have?

- ☐ Specific roles
- ☐ No roles
- ☐ Random roles
- ☐ Only storage roles

Answer: Specific roles

Simple Permanent Tissue (Parenchyma)

1. What is the most common simple permanent tissue?

- ☐ Parenchyma
- ☐ Collenchyma
- ☐ Sclerenchyma
- ☐ Xylem

Answer: Parenchyma

2. What is a main function of parenchyma?

- ☐ Storing food
- ☐ Mechanical strength
- ☐ Transporting water
- ☐ Movement

Answer: Storing food

3. Parenchyma with chlorophyll is called?

- ☐ Chlorenchyma
- ☐ Aerenchyma
- ☐ Sclerenchyma
- ☐ Epidermis

Answer: Chlorenchyma

4. Aerenchyma helps aquatic plants to?

- ☐ Float
- ☐ Sink
- ☐ Dry out
- ☐ Reproduce

Answer: Float

5. Are parenchyma cells living?

- ☐ Yes
- ☐ No
- ☐ Half of them
- ☐ Only in roots

Answer: Yes

Collenchyma and Sclerenchyma

1. Which tissue provides flexibility to plants?

- ☐ Collenchyma
- ☐ Parenchyma
- ☐ Sclerenchyma
- ☐ Xylem

Answer: Collenchyma

2. Sclerenchyma cells are?

- ☐ Dead
- ☐ Living
- ☐ Dividing
- ☐ Photosynthetic

Answer: Dead

3. The husk of a coconut is made of?

- ☐ Sclerenchyma
- ☐ Collenchyma
- ☐ Parenchyma
- ☐ Epidermis

Answer: Sclerenchyma

4. What makes sclerenchyma walls thick?

- ☐ Lignin
- ☐ Suberin
- ☐ Pectin
- ☐ Cellulose

Answer: Lignin

5. Collenchyma is found in?

- ☐ Leaf stalks
- ☐ Root tips
- ☐ Bark
- ☐ Seeds

Answer: Leaf stalks

Protective Tissue

1. The outermost layer of plant cells is?

- ☐ Epidermis
- ☐ Cortex
- ☐ Pith
- ☐ Cambium

Answer: Epidermis

2. What are stomata?

- ☐ Pores in the leaf epidermis
- ☐ Cells in the root
- ☐ Hairs on the stem
- ☐ Waxy coating

Answer: Pores in the leaf epidermis

3. What is the function of cutin?

- ☐ Prevent water loss
- ☐ Allow gas exchange
- ☐ Absorb water
- ☐ Attract insects

Answer: Prevent water loss

4. Cork cells have what substance in their walls?

- ☐ Suberin
- ☐ Lignin
- ☐ Cutin
- ☐ Pectin

Answer: Suberin

5. Are cork cells living?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only in young plants

Answer: No

Complex Permanent Tissue: Xylem

1. What does xylem transport?

- ☐ Water and minerals
- ☐ Food
- ☐ Air
- ☐ Hormones

Answer: Water and minerals

2. Which of these is NOT part of xylem?

- ☐ Sieve tubes
- ☐ Tracheids
- ☐ Vessels
- ☐ Xylem parenchyma

Answer: Sieve tubes

3. In which direction does xylem transport?

- ☐ Vertically (upwards)
- ☐ Downwards only
- ☐ Both directions
- ☐ Sideways

Answer: Vertically (upwards)

4. Are most xylem cells dead or living at maturity?

- ☐ Dead
- ☐ Living
- ☐ Dividing
- ☐ Dormant

Answer: Dead

5. Complex tissues are made of?

- ☐ More than one type of cell
- ☐ Only one type of cell
- ☐ Only dead cells
- ☐ Only living cells

Answer: More than one type of cell

Complex Permanent Tissue: Phloem

1. What is the function of phloem?

- ☐ Transport food
- ☐ Transport water
- ☐ Support
- ☐ Protection

Answer: Transport food

2. Phloem transport is in which direction?

- ☐ Both directions
- ☐ Upwards only
- ☐ Downwards only
- ☐ None

Answer: Both directions

3. Which phloem component is dead?

- ☐ Phloem fibres
- ☐ Sieve tubes
- ☐ Companion cells
- ☐ Phloem parenchyma

Answer: Phloem fibres

4. Sieve tubes have?

- ☐ Perforated walls
- ☐ Thick lignified walls
- ☐ No cytoplasm
- ☐ No nucleus

Answer: Perforated walls

5. Phloem is an example of?

- ☐ Complex permanent tissue
- ☐ Simple permanent tissue
- ☐ Meristematic tissue
- ☐ Protective tissue

Answer: Complex permanent tissue

Animal Tissues Overview

1. Which is NOT a type of animal tissue?

- ☐ Meristematic tissue
- ☐ Epithelial tissue
- ☐ Connective tissue
- ☐ Muscular tissue

Answer: Meristematic tissue

2. Tissue responsible for movement is?

- ☐ Muscular
- ☐ Nervous
- ☐ Epithelial
- ☐ Connective

Answer: Muscular

3. Tissue responsible for protection is?

- ☐ Epithelial
- ☐ Muscular
- ☐ Connective
- ☐ Nervous

Answer: Epithelial

4. Blood belongs to which category?

- ☐ Connective tissue
- ☐ Epithelial tissue
- ☐ Muscular tissue
- ☐ Nervous tissue

Answer: Connective tissue

5. The brain is made of?

- ☐ Nervous tissue
- ☐ Muscular tissue
- ☐ Connective tissue
- ☐ Epithelial tissue

Answer: Nervous tissue

Epithelial Tissue

1. What type of epithelium lines the mouth?

- ☐ Squamous epithelium
- ☐ Cuboidal epithelium
- ☐ Columnar epithelium
- ☐ Glandular epithelium

Answer: Squamous epithelium

2. Which epithelium has hair-like cilia?

- ☐ Ciliated columnar
- ☐ Stratified squamous
- ☐ Cuboidal
- ☐ Simple squamous

Answer: Ciliated columnar

3. Where is cuboidal epithelium found?

- ☐ Kidney tubules
- ☐ Skin
- ☐ Lungs
- ☐ Stomach

Answer: Kidney tubules

4. The skin is made of?

- ☐ Stratified squamous epithelium
- ☐ Simple squamous epithelium
- ☐ Columnar epithelium
- ☐ Cuboidal epithelium

Answer: Stratified squamous epithelium

5. What is the main function of glandular epithelium?

- ☐ Secretion
- ☐ Movement
- ☐ Support
- ☐ Conduction

Answer: Secretion

Connective Tissue: Blood and Bone

1. The liquid matrix of blood is called?

- ☐ Plasma
- ☐ Serum
- ☐ Lymph
- ☐ Water

Answer: Plasma

2. Bone cells are embedded in a matrix of?

- ☐ Calcium and phosphorus
- ☐ Proteins and sugars
- ☐ Fats
- ☐ Silica

Answer: Calcium and phosphorus

3. Is bone flexible?

- ☐ No, it is nonflexible
- ☐ Yes, very flexible
- ☐ Slightly flexible
- ☐ Only when young

Answer: No, it is nonflexible

4. What does blood transport?

- ☐ Gases, food, and hormones
- ☐ Only oxygen
- ☐ Only waste
- ☐ Nothing

Answer: Gases, food, and hormones

5. RBCs are found in?

- ☐ Blood
- ☐ Bone
- ☐ Cartilage
- ☐ Muscle

Answer: Blood

Other Connective Tissues

1. Ligaments connect?

- ☐ Bone to bone
- ☐ Muscle to bone
- ☐ Muscle to muscle
- ☐ Skin to muscle

Answer: Bone to bone

2. Tendons connect?

- ☐ Muscle to bone
- ☐ Bone to bone
- ☐ Nerve to muscle
- ☐ Skin to bone

Answer: Muscle to bone

3. Cartilage is found in?

- ☐ Nose and ear
- ☐ Teeth
- ☐ Hair
- ☐ Nails

Answer: Nose and ear

4. Adipose tissue stores?

- ☐ Fat
- ☐ Water
- ☐ Protein
- ☐ Starch

Answer: Fat

5. Areolar tissue is found?

- ☐ Between skin and muscles
- ☐ In bones
- ☐ In teeth
- ☐ In hair

Answer: Between skin and muscles

Muscular Tissue

1. Which muscles are voluntary?

- ☐ Striated muscles
- ☐ Smooth muscles
- ☐ Cardiac muscles
- ☐ All of them

Answer: Striated muscles

2. Heart muscles are called?

- ☐ Cardiac muscles
- ☐ Striated muscles
- ☐ Smooth muscles
- ☐ Skeletal muscles

Answer: Cardiac muscles

3. Which muscles are found in the alimentary canal?

- ☐ Smooth muscles
- ☐ Striated muscles
- ☐ Cardiac muscles
- ☐ Voluntary muscles

Answer: Smooth muscles

4. Striated muscles are attached to?

- ☐ Bones
- ☐ Skin
- ☐ Organs
- ☐ Nerves

Answer: Bones

5. Muscle cells are called?

- ☐ Fibres
- ☐ Neurons
- ☐ Osteocytes
- ☐ Chondrocytes

Answer: Fibres

Nervous Tissue

1. The unit of nervous tissue is?

- ☐ Neuron
- ☐ Nephron
- ☐ Cell body
- ☐ Axon

Answer: Neuron

2. The long part of a neuron is called?

- ☐ Axon
- ☐ Dendrite
- ☐ Cell body
- ☐ Nucleus

Answer: Axon

3. Branched parts of a neuron are?

- ☐ Dendrites
- ☐ Axons
- ☐ Nerve endings
- ☐ Synapses

Answer: Dendrites

4. What passes along the nerve fibre?

- ☐ Nerve impulse
- ☐ Blood
- ☐ Hormones
- ☐ Water

Answer: Nerve impulse

5. Nervous tissue allows us to?

- ☐ Respond to stimuli
- ☐ Digest food
- ☐ Transport blood
- ☐ Photosynthesize

Answer: Respond to stimuli

Chapter 7: Motion

Introduction to Motion

1. When is an object said to be in motion?

- ☐ When its position changes with time
- ☐ When it is invisible
- ☐ When it is heavy
- ☐ When it is hot

Answer: When its position changes with time

2. Can an object be moving for one person and stationary for another?

- ☐ Yes, motion is relative
- ☐ No, motion is absolute
- ☐ Only in space
- ☐ Never

Answer: Yes, motion is relative

3. What is indirect evidence of motion?

- ☐ Observing effects like dust movement
- ☐ Seeing the object move
- ☐ Measuring speed
- ☐ Hearing sound

Answer: Observing effects like dust movement

4. Which of these is NOT in motion?

- ☐ A parked car
- ☐ Blood flowing
- ☐ Earth rotating
- ☐ Atoms vibrating

Answer: A parked car

5. Sunrise and sunset are caused by?

- ☐ Motion of the earth
- ☐ Motion of the sun
- ☐ Motion of the moon
- ☐ Motion of stars

Answer: Motion of the earth

Describing Motion

1. To describe position, we need a?

- ☐ Reference point
- ☐ Stopwatch
- ☐ Thermometer
- ☐ Compass

Answer: Reference point

2. The reference point is also called?

- ☐ Origin
- ☐ Destination
- ☐ Path
- ☐ Vector

Answer: Origin

3. If school is 2km north of station, what is the origin?

- ☐ Station
- ☐ School
- ☐ North
- ☐ 2km

Answer: Station

4. Can we choose any reference point?

- ☐ Yes
- ☐ No
- ☐ Only fixed ones
- ☐ Only moving ones

Answer: Yes

5. Location depends on?

- ☐ Reference point
- ☐ Time of day
- ☐ Weather
- ☐ Speed

Answer: Reference point

Motion Along a Straight Line

1. Total path length covered is called?

- ☐ Distance
- ☐ Displacement
- ☐ Speed
- ☐ Velocity

Answer: Distance

2. Shortest distance from initial to final position is?

- ☐ Displacement
- ☐ Distance
- ☐ Path
- ☐ Length

Answer: Displacement

3. Displacement has?

- ☐ Magnitude and direction
- ☐ Only magnitude
- ☐ Only direction
- ☐ Neither

Answer: Magnitude and direction

4. Can displacement be zero?

- ☐ Yes
- ☐ No
- ☐ Never
- ☐ Only for light

Answer: Yes

5. If you go 5m East and 5m West, displacement is?

- ☐ 0m
- ☐ 10m
- ☐ 5m
- ☐ 25m

Answer: 0m

Uniform and Non-Uniform Motion

1. Equal distances in equal time intervals is?

- ☐ Uniform motion
- ☐ Non-uniform motion
- ☐ Accelerated motion
- ☐ Circular motion

Answer: Uniform motion

2. Unequal distances in equal time intervals is?

- ☐ Non-uniform motion
- ☐ Uniform motion
- ☐ Constant speed
- ☐ Rest

Answer: Non-uniform motion

3. A car in crowded traffic typically shows?

- ☐ Non-uniform motion
- ☐ Uniform motion
- ☐ Constant velocity
- ☐ Zero acceleration

Answer: Non-uniform motion

4. Planets revolving around sun is?

- ☐ Uniform circular motion
- ☐ Linear motion
- ☐ Random motion
- ☐ Zigzag motion

Answer: Uniform circular motion

5. For uniform motion, time interval should be?

- ☐ Small
- ☐ Large
- ☐ Infinite
- ☐ Zero

Answer: Small

Measuring the Rate of Motion

1. Rate of motion is measured by?

- ☐ Speed
- ☐ Distance
- ☐ Time
- ☐ Mass

Answer: Speed

2. SI unit of speed is?

- ☐ m/s
- ☐ km/h
- ☐ cm/s
- ☐ miles/hour

Answer: m/s

3. Average speed is?

- ☐ Total distance / Total time
- ☐ Total time / Total distance
- ☐ Distance x Time
- ☐ Speed x Time

Answer: Total distance / Total time

4. Does speed specify direction?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only in space

Answer: No

5. An object covers 16m in 4s. Speed is?

- ☐ 4 m/s
- ☐ 64 m/s
- ☐ 12 m/s
- ☐ 0.25 m/s

Answer: 4 m/s

Speed with Direction: Velocity

1. Speed with direction is called?

- ☐ Velocity
- ☐ Acceleration
- ☐ Distance
- ☐ Displacement

Answer: Velocity

2. Velocity changes if?

- ☐ Speed or direction changes
- ☐ Only time changes
- ☐ Only mass changes
- ☐ Nothing changes

Answer: Speed or direction changes

3. Average velocity formula (uniform change) is?

- ☐ $(u + v) / 2$
- ☐ $u + v$
- ☐ $v - u$
- ☐ $u \times v$

Answer: $(u + v) / 2$

4. If a car moves in a circle at constant speed, does velocity change?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ Never

Answer: Yes

5. Unit of velocity is?

- ☐ m/s
- ☐ m/s²
- ☐ m
- ☐ s

Answer: m/s

Rate of Change of Velocity: Acceleration

1. Acceleration is?

- ☐ Change in velocity per unit time
- ☐ Change in distance
- ☐ Change in speed
- ☐ Change in position

Answer: Change in velocity per unit time

2. Formula for acceleration is?

- ☐ $(v - u) / t$
- ☐ $v \times t$
- ☐ $u + at$
- ☐ s / t

Answer: $(v - u) / t$

3. SI unit of acceleration is?

- ☐ m/s^2
- ☐ m/s
- ☐ km/h
- ☐ m

Answer: m/s^2

4. If velocity increases, acceleration is?

- ☐ Positive
- ☐ Negative
- ☐ Zero
- ☐ Undefined

Answer: Positive

5. If velocity is constant, acceleration is?

- ☐ Zero
- ☐ Constant
- ☐ Increasing
- ☐ Decreasing

Answer: Zero

Graphical Representation: Distance-Time Graphs

1. Slope of distance-time graph gives?

- ☐ Speed
- ☐ Acceleration
- ☐ Displacement
- ☐ Time

Answer: Speed

2. For uniform speed, d-t graph is?

- ☐ Straight line
- ☐ Curved line
- ☐ Circle
- ☐ Zigzag

Answer: Straight line

3. Graph parallel to time axis means object is?

- ☐ At rest
- ☐ Moving uniformly
- ☐ Accelerating
- ☐ Decelerating

Answer: At rest

4. Curved d-t graph indicates?

- ☐ Non-uniform speed
- ☐ Uniform speed
- ☐ Rest
- ☐ Zero speed

Answer: Non-uniform speed

5. Distance is plotted on which axis?

- ☐ Y-axis
- ☐ X-axis
- ☐ Z-axis
- ☐ Any axis

Answer: Y-axis

Velocity-Time Graphs

1. Area under v-t graph gives?

- ☐ Displacement
- ☐ Acceleration
- ☐ Speed
- ☐ Time

Answer: Displacement

2. Slope of v-t graph gives?

- ☐ Acceleration
- ☐ Displacement
- ☐ Speed
- ☐ Force

Answer: Acceleration

3. For uniform acceleration, v-t graph is?

- ☐ Straight line inclined to axes
- ☐ Curved line
- ☐ Parallel to time axis
- ☐ Parallel to velocity axis

Answer: Straight line inclined to axes

4. If v-t graph is parallel to time axis, acceleration is?

- ☐ Zero
- ☐ Constant
- ☐ Variable
- ☐ Infinite

Answer: Zero

5. Retardation graph slope is?

- ☐ Negative
- ☐ Positive
- ☐ Zero
- ☐ Undefined

Answer: Negative

Equations of Motion

1. First equation of motion is?

- ☐ $v = u + at$
- ☐ $s = ut + \frac{1}{2}at^2$
- ☐ $2as = v^2 - u^2$
- ☐ $F = ma$

Answer: $v = u + at$

2. Second equation relates?

- ☐ Position and time
- ☐ Velocity and time
- ☐ Position and velocity
- ☐ Force and mass

Answer: Position and time

3. Third equation is?

- ☐ $2as = v^2 - u^2$
- ☐ $v = u + at$
- ☐ $s = ut + \frac{1}{2}at^2$
- ☐ $E = mc^2$

Answer: $2as = v^2 - u^2$

4. 'u' stands for?

- ☐ Initial velocity
- ☐ Final velocity
- ☐ Acceleration
- ☐ Time

Answer: Initial velocity

5. These equations apply for?

- ☐ Uniform acceleration
- ☐ Non-uniform acceleration
- ☐ Variable acceleration
- ☐ Zero velocity

Answer: Uniform acceleration

Uniform Circular Motion

1. Motion in a circle at constant speed is?

- ☐ Accelerated motion
- ☐ Uniform motion
- ☐ Retarded motion
- ☐ Rest

Answer: Accelerated motion

2. Why is it accelerated?

- ☐ Direction changes continuously
- ☐ Speed changes
- ☐ Mass changes
- ☐ Time stops

Answer: Direction changes continuously

3. Direction of motion at any point is?

- ☐ Tangential
- ☐ Radial
- ☐ Vertical
- ☐ Horizontal

Answer: Tangential

4. Formula for circular speed is?

- ☐ $v = 2\pi r / t$
- ☐ $v = \pi r^2 / t$
- ☐ $v = 2r / t$
- ☐ $v = r / t$

Answer: $v = 2\pi r / t$

5. Example of uniform circular motion?

- ☐ Moon revolving around Earth
- ☐ Car on straight road
- ☐ Stone falling
- ☐ Bullet fired

Answer: Moon revolving around Earth

Chapter 8: Force and Laws of Motion

Force and its Effects

1. What can force do?

- ☐ Change speed, direction, or shape
- ☐ Only change speed
- ☐ Only change direction
- ☐ Nothing

Answer: Change speed, direction, or shape

2. Force is based on the concept of?

- ☐ Push, hit, or pull
- ☐ Mass and volume
- ☐ Speed and time
- ☐ Energy

Answer: Push, hit, or pull

3. Can force change the shape of an object?

- ☐ Yes
- ☐ No
- ☐ Only for liquids
- ☐ Only for gases

Answer: Yes

4. Pushing a stationary object can?

- ☐ Put it into motion
- ☐ Break it
- ☐ Change its color
- ☐ Do nothing

Answer: Put it into motion

5. Stopping a moving object requires?

- ☐ Effort or force
- ☐ No effort
- ☐ Magic
- ☐ Waiting

Answer: Effort or force

Balanced Forces

1. Balanced forces are?

- ☐ Equal in magnitude, opposite in direction
- ☐ Unequal in magnitude
- ☐ Same direction
- ☐ Zero magnitude

Answer: Equal in magnitude, opposite in direction

2. Do balanced forces change the state of motion?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only for light objects

Answer: No

3. If a block is pulled equally from both sides, it?

- ☐ Does not move
- ☐ Moves right
- ☐ Moves left
- ☐ Moves up

Answer: Does not move

4. The net force in a balanced system is?

- ☐ Zero
- ☐ Double
- ☐ Half
- ☐ Infinite

Answer: Zero

5. Balanced forces can change?

- ☐ Shape
- ☐ Speed
- ☐ Velocity
- ☐ Direction

Answer: Shape

Unbalanced Forces

1. Unbalanced forces act in the direction of?

- ☐ The greater force
- ☐ The smaller force
- ☐ Gravity
- ☐ Friction

Answer: The greater force

2. What is required to accelerate an object?

- ☐ Unbalanced force
- ☐ Balanced force
- ☐ No force
- ☐ Friction only

Answer: Unbalanced force

3. If an unbalanced force acts on an object, it?

- ☐ Changes speed or direction
- ☐ Stops moving
- ☐ Remains at rest
- ☐ Disappears

Answer: Changes speed or direction

4. To keep an object moving with uniform velocity, the net force must be?

- ☐ Zero
- ☐ Positive
- ☐ Negative
- ☐ Unbalanced

Answer: Zero

5. When you stop pedaling a bicycle, it slows down due to?

- ☐ Unbalanced friction force
- ☐ Balanced force
- ☐ Inertia
- ☐ Gravity

Answer: Unbalanced friction force

Friction

1. Friction force acts in which direction?

- ☐ Opposite to motion
- ☐ Same as motion
- ☐ Perpendicular to motion
- ☐ Downwards

Answer: Opposite to motion

2. Friction arises between?

- ☐ Two surfaces in contact
- ☐ Air and water
- ☐ Space
- ☐ Magnets

Answer: Two surfaces in contact

3. If a pushed box doesn't move, friction is?

- ☐ Balancing the push
- ☐ Less than the push
- ☐ Zero
- ☐ Helping the push

Answer: Balancing the push

4. To move a heavy box, pushing force must be?

- ☐ Greater than friction
- ☐ Equal to friction
- ☐ Less than friction
- ☐ Zero

Answer: Greater than friction

5. Friction is a type of?

- ☐ Contact force
- ☐ Non-contact force
- ☐ Magnetic force
- ☐ Gravitational force

Answer: Contact force

First Law of Motion

1. First Law of Motion is also known as?

- ☐ Law of Inertia
- ☐ Law of Momentum
- ☐ Law of Action-Reaction
- ☐ Law of Gravity

Answer: Law of Inertia

2. An object at rest tends to?

- ☐ Remain at rest
- ☐ Start moving
- ☐ Fly
- ☐ Vibrate

Answer: Remain at rest

3. An object in uniform motion tends to?

- ☐ Keep moving in a straight line
- ☐ Stop
- ☐ Change direction
- ☐ Accelerate

Answer: Keep moving in a straight line

4. What changes the state of motion?

- ☐ Applied unbalanced force
- ☐ Inertia
- ☐ Mass
- ☐ Time

Answer: Applied unbalanced force

5. Who presented the three laws of motion?

- ☐ Newton
- ☐ Galileo
- ☐ Einstein
- ☐ Darwin

Answer: Newton

Inertia

1. Inertia is the tendency to?

- ☐ Resist change in state of motion
- ☐ Change state of motion
- ☐ Move faster
- ☐ Stop moving

Answer: Resist change in state of motion

2. Why do passengers fall back when a bus starts?

- ☐ Inertia of rest
- ☐ Inertia of motion
- ☐ Gravity
- ☐ Friction

Answer: Inertia of rest

3. Why do passengers fall forward when a bus stops?

- ☐ Inertia of motion
- ☐ Inertia of rest
- ☐ Acceleration
- ☐ Speed

Answer: Inertia of motion

4. Why does a coin fall into a glass when the card is flicked?

- ☐ Inertia of the coin
- ☐ Gravity only
- ☐ Card pushes it
- ☐ Coin is heavy

Answer: Inertia of the coin

5. Which objects have inertia?

- ☐ All objects
- ☐ Only moving objects
- ☐ Only heavy objects
- ☐ Only solids

Answer: All objects

Inertia and Mass

1. Inertia is measured by?

- ☐ Mass
- ☐ Volume
- ☐ Speed
- ☐ Force

Answer: Mass

2. Which has more inertia?

- ☐ A stone
- ☐ A rubber ball of same size
- ☐ Both same
- ☐ Depends on speed

Answer: A stone

3. Heavier objects have?

- ☐ Larger inertia
- ☐ Smaller inertia
- ☐ No inertia
- ☐ Variable inertia

Answer: Larger inertia

4. Which is harder to push?

- ☐ Box full of books
- ☐ Empty box
- ☐ Small toy
- ☐ Feather

Answer: Box full of books

5. Mass is a measure of?

- ☐ Inertia
- ☐ Velocity
- ☐ Acceleration
- ☐ Distance

Answer: Inertia

Momentum

1. Formula for momentum (p) is?

- ☐ mv
- ☐ ma
- ☐ $\frac{1}{2}mv^2$
- ☐ mg

Answer: mv

2. SI unit of momentum is?

- ☐ kg m/s
- ☐ kg m/s^2
- ☐ N
- ☐ Joule

Answer: kg m/s

3. Momentum has?

- ☐ Magnitude and direction
- ☐ Only magnitude
- ☐ Only direction
- ☐ Neither

Answer: Magnitude and direction

4. Direction of momentum is same as?

- ☐ Velocity
- ☐ Acceleration
- ☐ Force
- ☐ Displacement

Answer: Velocity

5. An object at rest has momentum?

- ☐ Zero
- ☐ Infinite
- ☐ Equal to mass
- ☐ Variable

Answer: Zero

Second Law of Motion

1. Rate of change of momentum is proportional to?

- ☐ Applied unbalanced force
- ☐ Velocity
- ☐ Mass
- ☐ Time

Answer: Applied unbalanced force

2. This law gives a method to measure?

- ☐ Force
- ☐ Inertia
- ☐ Energy
- ☐ Work

Answer: Force

3. Force acts in the direction of?

- ☐ Change of momentum
- ☐ Velocity
- ☐ Mass
- ☐ Gravity

Answer: Change of momentum

4. A greater force produces?

- ☐ Greater change in velocity/momentum
- ☐ Less change
- ☐ No change
- ☐ Constant velocity

Answer: Greater change in velocity/momentum

5. Change in momentum depends on?

- ☐ Force and time
- ☐ Force only
- ☐ Time only
- ☐ Mass only

Answer: Force and time

Mathematical Formulation of Second Law

1. Mathematical formula for Second Law is?

- ☐ $F = ma$
- ☐ $F = mv$
- ☐ $F = m/a$
- ☐ $a = mF$

Answer: $F = ma$

2. Acceleration 'a' is?

- ☐ $(v - u) / t$
- ☐ v / t
- ☐ u / t
- ☐ s / t

Answer: $(v - u) / t$

3. The constant 'k' in $F = kma$ is?

- ☐ 1
- ☐ 0
- ☐ 10
- ☐ 9.8

Answer: 1

4. If mass is 2kg and acceleration is 5m/s^2 , Force is?

- ☐ 10 N
- ☐ 2.5 N
- ☐ 7 N
- ☐ 3 N

Answer: 10 N

5. If Force is 0, acceleration is?

- ☐ 0
- ☐ Constant
- ☐ Infinite
- ☐ 1

Answer: 0

Unit of Force

1. SI unit of force is?

- ☐ Newton (N)
- ☐ Dyne
- ☐ Pascal
- ☐ Joule

Answer: Newton (N)

2. 1 Newton is force required to accelerate?

- ☐ 1 kg mass at 1 m/s^2
- ☐ 1 g mass at 1 cm/s^2
- ☐ 1 kg at 10 m/s^2
- ☐ 10 kg at 1 m/s^2

Answer: 1 kg mass at 1 m/s^2

3. Symbol for Newton is?

- ☐ N
- ☐ n
- ☐ Kg
- ☐ m

Answer: N

4. Force is a?

- ☐ Vector quantity
- ☐ Scalar quantity
- ☐ Fundamental quantity
- ☐ None

Answer: Vector quantity

5. kg m s^{-2} is equivalent to?

- ☐ Newton
- ☐ Pascal
- ☐ Watt
- ☐ Joule

Answer: Newton

Applications of Second Law

1. Why does a fielder pull hands back while catching?

- ☐ To increase time and reduce force
- ☐ To show style
- ☐ To decrease time
- ☐ To catch faster

Answer: To increase time and reduce force

2. Increasing time of impact?

- ☐ Decreases rate of change of momentum
- ☐ Increases force
- ☐ Does nothing
- ☐ Increases momentum

Answer: Decreases rate of change of momentum

3. High jumpers fall on cushions to?

- ☐ Increase time of fall stop
- ☐ Decrease time
- ☐ Increase force
- ☐ Bounce back

Answer: Increase time of fall stop

4. Stopping a ball suddenly causes?

- ☐ Large force and injury
- ☐ No force
- ☐ Less force
- ☐ Slow stop

Answer: Large force and injury

5. Karate player breaks ice slab with?

- ☐ Single fast blow
- ☐ Slow push
- ☐ Heavy hammer
- ☐ Heat

Answer: Single fast blow

Third Law of Motion

1. Third Law states?

- ☐ To every action there is equal and opposite reaction
- ☐ Force equals mass times acceleration
- ☐ Objects remain at rest
- ☐ Energy is conserved

Answer: To every action there is equal and opposite reaction

2. Action and reaction forces act on?

- ☐ Two different objects
- ☐ Same object
- ☐ No object
- ☐ One object only

Answer: Two different objects

3. Action and reaction are?

- ☐ Simultaneous
- ☐ One after another
- ☐ Delayed
- ☐ Random

Answer: Simultaneous

4. If A exerts force on B, B exerts force on A that is?

- ☐ Equal and opposite
- ☐ Equal and same direction
- ☐ Unequal
- ☐ Zero

Answer: Equal and opposite

5. Do action and reaction cancel each other?

- ☐ No, because they act on different objects
- ☐ Yes
- ☐ Sometimes
- ☐ Only in space

Answer: No, because they act on different objects

Action and Reaction

1. When walking, we push the ground?

- ☐ Backwards
- ☐ Forwards
- ☐ Downwards
- ☐ Upwards

Answer: Backwards

2. The ground pushes us?

- ☐ Forwards
- ☐ Backwards
- ☐ Downwards
- ☐ Sideways

Answer: Forwards

3. Why do equal forces produce different accelerations?

- ☐ Different masses of objects
- ☐ Different times
- ☐ Different shapes
- ☐ Different colors

Answer: Different masses of objects

4. A sailor jumps forward from a boat. The boat moves?

- ☐ Backwards
- ☐ Forwards
- ☐ Downwards
- ☐ Doesn't move

Answer: Backwards

5. This is explained by?

- ☐ Third Law of Motion
- ☐ First Law
- ☐ Second Law
- ☐ Law of Gravitation

Answer: Third Law of Motion

Recoil of a Gun

1. Recoil of a gun is due to?

- ☐ Third Law of Motion
- ☐ First Law
- ☐ Friction
- ☐ Gravity

Answer: Third Law of Motion

2. Gun exerts forward force on bullet. Bullet exerts?

- ☐ Backward force on gun
- ☐ Forward force
- ☐ No force
- ☐ Downward force

Answer: Backward force on gun

3. Why is gun acceleration less than bullet?

- ☐ Gun has much greater mass
- ☐ Gun is fixed
- ☐ Bullet is sharp
- ☐ Gun is lighter

Answer: Gun has much greater mass

4. Recoil force is in which direction?

- ☐ Opposite to bullet
- ☐ Same as bullet
- ☐ Perpendicular
- ☐ Random

Answer: Opposite to bullet

5. This phenomenon is an example of?

- ☐ Conservation of momentum
- ☐ Conservation of energy
- ☐ Inertia
- ☐ Friction

Answer: Conservation of momentum

Chapter 9: Gravitation

Introduction to Gravitation

1. What force keeps the planets moving around the sun?

- ☐ Gravitational force
- ☐ Magnetic force
- ☐ Friction
- ☐ Electrostatic force

Answer: Gravitational force

2. Newton saw an apple fall. This led to the idea of?

- ☐ Gravity
- ☐ Light
- ☐ Sound
- ☐ Electricity

Answer: Gravity

3. Does the earth attract the moon?

- ☐ Yes
- ☐ No
- ☐ Only during full moon
- ☐ Only during eclipse

Answer: Yes

4. Is gravitational force limited to earth?

- ☐ No, it is universal
- ☐ Yes
- ☐ Only solar system
- ☐ Only nearby objects

Answer: No, it is universal

5. Who formulated the Universal Law of Gravitation?

- ☐ Isaac Newton
- ☐ Galileo
- ☐ Einstein
- ☐ Kepler

Answer: Isaac Newton

Centripetal Force

1. Centripetal force acts towards?

- ☐ The centre of the circle
- ☐ Away from centre
- ☐ Tangent to circle
- ☐ Upwards

Answer: The centre of the circle

2. What happens if centripetal force ceases?

- ☐ Object flies off along tangent
- ☐ Object stops
- ☐ Object moves to centre
- ☐ Object spirals

Answer: Object flies off along tangent

3. Motion of moon around earth is due to?

- ☐ Centripetal force provided by gravity
- ☐ Wind
- ☐ Magnetic force
- ☐ Rocket propulsion

Answer: Centripetal force provided by gravity

4. Does velocity change in uniform circular motion?

- ☐ Yes, direction changes
- ☐ No
- ☐ Only magnitude changes
- ☐ Only speed changes

Answer: Yes, direction changes

5. Centripetal means?

- ☐ Centre-seeking
- ☐ Centre-fleeing
- ☐ Circular
- ☐ Fast

Answer: Centre-seeking

Universal Law of Gravitation

1. Force is proportional to?

- ☐ Product of masses
- ☐ Sum of masses
- ☐ Difference of masses
- ☐ Division of masses

Answer: Product of masses

2. Force is inversely proportional to?

- ☐ Square of distance
- ☐ Distance
- ☐ Cube of distance
- ☐ Square root of distance

Answer: Square of distance

3. The value of G (Gravitational Constant) is?

- ☐ $6.673 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$
- ☐ 9.8 m/s^2
- ☐ 10 m/s^2
- ☐ $3 \times 10^8 \text{ m/s}$

Answer: $6.673 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$

4. Who determined the value of G?

- ☐ Henry Cavendish
- ☐ Newton
- ☐ Galileo
- ☐ Kepler

Answer: Henry Cavendish

5. The force acts along?

- ☐ Line joining centres of two objects
- ☐ Tangent
- ☐ Perpendicular
- ☐ Random direction

Answer: Line joining centres of two objects

Free Fall

1. Free fall means object falling under?

- ☐ Gravity alone
- ☐ Air resistance
- ☐ Magnetic force
- ☐ Wind

Answer: Gravity alone

2. During free fall, what changes?

- ☐ Velocity magnitude
- ☐ Direction
- ☐ Mass
- ☐ Shape

Answer: Velocity magnitude

3. Acceleration during free fall is denoted by?

- ☐ g
- ☐ G
- ☐ a
- ☐ f

Answer: g

4. Is direction of motion changed in free fall?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Depends on mass

Answer: No

5. Earth attracts objects due to?

- ☐ Gravitational force
- ☐ Magnetic force
- ☐ Electrostatic force
- ☐ Friction

Answer: Gravitational force

Acceleration due to Gravity

1. Value of g on earth surface is approx?

- ☐ 9.8 m/s²
- ☐ 6.7 m/s²
- ☐ 1.6 m/s²
- ☐ 100 m/s²

Answer: 9.8 m/s²

2. Does g depend on mass of the falling object?

- ☐ No
- ☐ Yes
- ☐ Only for heavy objects
- ☐ Only for light objects

Answer: No

3. Value of g is greater at?

- ☐ Poles
- ☐ Equator
- ☐ Same everywhere
- ☐ Mountain top

Answer: Poles

4. Unit of g is same as?

- ☐ Acceleration
- ☐ Velocity
- ☐ Force
- ☐ Work

Answer: Acceleration

5. Formula for g is?

- ☐ GM/R^2
- ☐ Gm/d^2
- ☐ F/m
- ☐ ma

Answer: GM/R^2

Motion under Gravity Equations

1. Equation for velocity in free fall?

- ☐ $v = u + gt$
- ☐ $v = u + at$
- ☐ $s = ut + 1/2gt^2$
- ☐ $v^2 - u^2 = 2gs$

Answer: $v = u + gt$

2. If object is thrown up, g is taken as?

- ☐ Negative
- ☐ Positive
- ☐ Zero
- ☐ Constant

Answer: Negative

3. At maximum height, velocity is?

- ☐ Zero
- ☐ Maximum
- ☐ Minimum
- ☐ 9.8 m/s

Answer: Zero

4. Distance formula in free fall?

- ☐ $s = ut + \frac{1}{2}gt^2$
- ☐ $s = vt$
- ☐ $s = u + v$
- ☐ $s = gt$

Answer: $s = ut + \frac{1}{2}gt^2$

5. If dropped from rest, initial velocity u is?

- ☐ 0
- ☐ 9.8
- ☐ Maximum
- ☐ 1

Answer: 0

Mass vs Weight

1. Mass is a measure of?

- ☐ Inertia
- ☐ Gravity
- ☐ Weight
- ☐ Force

Answer: Inertia

2. Does mass change on the moon?

- ☐ No
- ☐ Yes
- ☐ Becomes zero
- ☐ Increases

Answer: No

3. Weight is defined as?

- ☐ Force with which earth attracts an object
- ☐ Mass x Volume
- ☐ Inertia
- ☐ Quantity of matter

Answer: Force with which earth attracts an object

4. SI unit of Weight is?

- ☐ Newton
- ☐ Kilogram
- ☐ Pascal
- ☐ Joule

Answer: Newton

5. Formula for Weight is?

- ☐ $W = mg$
- ☐ $W = ma$
- ☐ $W = m/g$
- ☐ $W = mv$

Answer: $W = mg$

Weight on the Moon

1. Weight on moon is what fraction of weight on earth?

- ☐ $1/6$
- ☐ $1/2$
- ☐ $1/10$
- ☐ Same

Answer: $1/6$

2. Why is weight less on moon?

- ☐ Moon has less mass and weaker gravity
- ☐ Moon has no atmosphere
- ☐ Moon is smaller
- ☐ Moon is far

Answer: Moon has less mass and weaker gravity

3. If mass is 6kg on earth, mass on moon is?

- ☐ 6kg
- ☐ 1kg
- ☐ 36kg
- ☐ 0kg

Answer: 6kg

4. If weight is 60N on earth, weight on moon is?

- ☐ 10N
- ☐ 6N
- ☐ 60N
- ☐ 360N

Answer: 10N

5. Does g value change on moon?

- ☐ Yes, it is less
- ☐ No, it is constant
- ☐ Yes, it is more
- ☐ It is zero

Answer: Yes, it is less

Thrust and Pressure

1. Thrust is force acting?

- ☐ Perpendicular to surface
- ☐ Parallel to surface
- ☐ At any angle
- ☐ Opposite to gravity

Answer: Perpendicular to surface

2. Pressure is?

- ☐ Thrust per unit area
- ☐ Force x Area
- ☐ Mass per unit volume
- ☐ Thrust x Time

Answer: Thrust per unit area

3. SI unit of pressure is?

- ☐ Pascal
- ☐ Newton
- ☐ Joule
- ☐ Watt

Answer: Pascal

4. For same force, smaller area gives?

- ☐ Larger pressure
- ☐ Smaller pressure
- ☐ Same pressure
- ☐ Zero pressure

Answer: Larger pressure

5. Why do school bags have wide straps?

- ☐ To reduce pressure on shoulders
- ☐ To look good
- ☐ To increase weight
- ☐ To increase pressure

Answer: To reduce pressure on shoulders

Pressure Examples

1. Why are knives sharp?

- ☐ To increase pressure for cutting
- ☐ To decrease pressure
- ☐ To look shiny
- ☐ To serve food

Answer: To increase pressure for cutting

2. Why do camels walk easily on sand?

- ☐ Broad feet reduce pressure
- ☐ Sharp feet
- ☐ Heavy weight
- ☐ Long legs

Answer: Broad feet reduce pressure

3. Why do trucks have wide tyres?

- ☐ To distribute weight and reduce pressure
- ☐ To move fast
- ☐ To look big
- ☐ To increase friction

Answer: To distribute weight and reduce pressure

4. A sharp nail penetrates easily because?

- ☐ Small area exerts high pressure
- ☐ It is made of iron
- ☐ It is heavy
- ☐ It is long

Answer: Small area exerts high pressure

5. Walking on sand is harder than lying down because?

- ☐ Feet have smaller area, exert more pressure
- ☐ Feet are heavy
- ☐ Sand is hot
- ☐ Lying increases weight

Answer: Feet have smaller area, exert more pressure

Buoyancy

1. Upward force exerted by fluid is called?

- ☐ Buoyant force
- ☐ Gravitational force
- ☐ Friction
- ☐ Tension

Answer: Buoyant force

2. Another name for buoyant force is?

- ☐ Upthrust
- ☐ Downthrust
- ☐ Weight
- ☐ Pressure

Answer: Upthrust

3. Does air exert buoyant force?

- ☐ Yes
- ☐ No
- ☐ Only on balloons
- ☐ Only on birds

Answer: Yes

4. Magnitude of buoyant force depends on?

- ☐ Density of fluid
- ☐ Color of fluid
- ☐ Temperature of object
- ☐ Shape of container

Answer: Density of fluid

5. Why does a mug feel lighter in water?

- ☐ Due to buoyancy
- ☐ Water reduces mass
- ☐ Gravity stops working
- ☐ Mug absorbs water

Answer: Due to buoyancy

Why Objects Float or Sink

1. An object floats if its density is?

- ☐ Less than liquid
- ☐ More than liquid
- ☐ Equal to liquid
- ☐ Zero

Answer: Less than liquid

2. An object sinks if its density is?

- ☐ Greater than liquid
- ☐ Less than liquid
- ☐ Equal to liquid
- ☐ Very low

Answer: Greater than liquid

3. Cork floats on water because?

- ☐ Density of cork < Density of water
- ☐ Cork is heavy
- ☐ Cork is wood
- ☐ Water pushes it down

Answer: Density of cork < Density of water

4. Iron nail sinks because?

- ☐ Density of iron > Density of water
- ☐ Iron is magnetic
- ☐ Iron is solid
- ☐ Water pulls it

Answer: Density of iron > Density of water

5. Density is defined as?

- ☐ Mass per unit volume
- ☐ Volume per unit mass
- ☐ Weight per area
- ☐ Force per volume

Answer: Mass per unit volume

Archimedes' Principle

1. Archimedes' Principle states upward force equals?

- ☐ Weight of fluid displaced
- ☐ Weight of object
- ☐ Volume of object
- ☐ Density of fluid

Answer: Weight of fluid displaced

2. Who discovered this principle?

- ☐ Archimedes
- ☐ Newton
- ☐ Pascal
- ☐ Bernoulli

Answer: Archimedes

3. This principle applies to?

- ☐ Both liquids and gases (fluids)
- ☐ Only water
- ☐ Only gases
- ☐ Only solids

Answer: Both liquids and gases (fluids)

4. When body is fully immersed, volume of fluid displaced equals?

- ☐ Volume of body
- ☐ Weight of body
- ☐ Mass of body
- ☐ Area of body

Answer: Volume of body

5. Eureka means?

- ☐ I have found it
- ☐ I am lost
- ☐ Water is hot
- ☐ Gold is pure

Answer: I have found it

Applications of Archimedes' Principle

1. Which instrument measures purity of milk?

- ☐ Lactometer
- ☐ Hydrometer
- ☐ Barometer
- ☐ Thermometer

Answer: Lactometer

2. Which instrument measures density of liquids?

- ☐ Hydrometer
- ☐ Lactometer
- ☐ Voltmeter
- ☐ Speedometer

Answer: Hydrometer

3. Archimedes' principle is used in designing?

- ☐ Ships and submarines
- ☐ Cars
- ☐ Planes
- ☐ Rockets

Answer: Ships and submarines

4. Why do steel ships float?

- ☐ They displace water equal to their weight
- ☐ Steel is light
- ☐ Engines push them up
- ☐ Air holds them

Answer: They displace water equal to their weight

5. A submarine dives by?

- ☐ Taking in water to increase weight
- ☐ Releasing air
- ☐ Using propeller
- ☐ Dropping anchor

Answer: Taking in water to increase weight

Summary of Gravitation

1. Gravitational force is a?

- ☐ Weak force unless large masses involved
- ☐ Strong force
- ☐ Repulsive force
- ☐ Short range force

Answer: Weak force unless large masses involved

2. Weight varies because?

- ☐ g varies from place to place
- ☐ Mass varies
- ☐ Earth is round
- ☐ Air pressure varies

Answer: g varies from place to place

3. Value of g decreases with?

- ☐ Altitude
- ☐ Depth
- ☐ Both A and B
- ☐ Neither

Answer: Both A and B

4. Mass is scalar or vector?

- ☐ Scalar
- ☐ Vector
- ☐ Neither
- ☐ Both

Answer: Scalar

5. Weight is scalar or vector?

- ☐ Vector
- ☐ Scalar
- ☐ Neither
- ☐ Both

Answer: Vector

Chapter 10: Work and Energy

Introduction to Work and Energy

1. What is needed for life processes?

- ☐ Energy
- ☐ Sleep
- ☐ Darkness
- ☐ Stillness

Answer: Energy

2. Where does energy for living beings come from?

- ☐ Food
- ☐ Sun directly
- ☐ Soil
- ☐ Water only

Answer: Food

3. Do machines need energy?

- ☐ Yes
- ☐ No
- ☐ Only large ones
- ☐ Only small ones

Answer: Yes

4. Which activity requires more energy?

- ☐ Running
- ☐ Sleeping
- ☐ Reading
- ☐ Sitting

Answer: Running

5. Engines often require fuel like?

- ☐ Petrol and diesel
- ☐ Water
- ☐ Sand
- ☐ Stones

Answer: Petrol and diesel

Scientific Conception of Work

1. Is reading a book considered work in science?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only if loud

Answer: No

2. If you push a wall and it doesn't move, is work done?

- ☐ No
- ☐ Yes
- ☐ A lot of work
- ☐ Negative work

Answer: No

3. Work in science depends on?

- ☐ Force and displacement
- ☐ Effort
- ☐ Time spent
- ☐ Sweat

Answer: Force and displacement

4. Mental labor is considered work in science?

- ☐ No
- ☐ Yes
- ☐ Depends on subject
- ☐ Only math

Answer: No

5. Standing with a heavy load is?

- ☐ No work
- ☐ Hard work
- ☐ Positive work
- ☐ Maximum work

Answer: No work

Two Conditions for Work

1. What must act on an object for work to be done?

- ☐ A force
- ☐ A thought
- ☐ A shadow
- ☐ A sound

Answer: A force

2. What must happen to the object for work to be done?

- ☐ It must be displaced
- ☐ It must stay still
- ☐ It must heat up
- ☐ It must change color

Answer: It must be displaced

3. If a bullock pulls a cart and it moves, is work done?

- ☐ Yes
- ☐ No
- ☐ Maybe
- ☐ Only if fast

Answer: Yes

4. Is work done if displacement is zero?

- ☐ No
- ☐ Yes
- ☐ Infinite
- ☐ Cannot say

Answer: No

5. Lifting a book involves work because?

- ☐ Force is applied and it moves
- ☐ Book is heavy
- ☐ Gravity exists
- ☐ It takes time

Answer: Force is applied and it moves

Work Done by a Constant Force

1. Formula for work is?

- ☐ $W = F \times s$
- ☐ $W = F / s$
- ☐ $W = s / F$
- ☐ $W = F + s$

Answer: $W = F \times s$

2. Work is a scalar or vector quantity?

- ☐ Scalar
- ☐ Vector
- ☐ Neither
- ☐ Both

Answer: Scalar

3. Unit of work is?

- ☐ Joule
- ☐ Newton
- ☐ Watt
- ☐ Pascal

Answer: Joule

4. 1 Joule is defined as?

- ☐ 1 N force displacing by 1 m
- ☐ 1 kg mass moving 1 m
- ☐ 1 N force for 1 sec
- ☐ 1 Watt power

Answer: 1 N force displacing by 1 m

5. If $F=0$, work done is?

- ☐ Zero
- ☐ Infinite
- ☐ One
- ☐ Constant

Answer: Zero

Positive and Negative Work

1. Work is positive when force acts in?

- ☐ Direction of displacement
- ☐ Opposite direction
- ☐ Perpendicular direction
- ☐ Random direction

Answer: Direction of displacement

2. Work is negative when force acts in?

- ☐ Opposite direction to displacement
- ☐ Same direction
- ☐ Any direction
- ☐ Vertical direction

Answer: Opposite direction to displacement

3. Gravity doing work on a ball thrown upwards is?

- ☐ Negative
- ☐ Positive
- ☐ Zero
- ☐ Undefined

Answer: Negative

4. Gravity doing work on a falling ball is?

- ☐ Positive
- ☐ Negative
- ☐ Zero
- ☐ Variable

Answer: Positive

5. Force of friction always does?

- ☐ Negative work
- ☐ Positive work
- ☐ Zero work
- ☐ Maximum work

Answer: Negative work

Energy

1. Energy is defined as?

- ☐ Capacity to do work
- ☐ Rate of work
- ☐ Force applied
- ☐ Momentum

Answer: Capacity to do work

2. Unit of energy is?

- ☐ Joule
- ☐ Newton
- ☐ Watt
- ☐ Pascal

Answer: Joule

3. Object doing work?

- ☐ Loses energy
- ☐ Gains energy
- ☐ Keeps energy
- ☐ Destroys energy

Answer: Loses energy

4. Object on which work is done?

- ☐ Gains energy
- ☐ Loses energy
- ☐ Has no energy
- ☐ Stops moving

Answer: Gains energy

5. Biggest natural source of energy is?

- ☐ Sun
- ☐ Moon
- ☐ Earth
- ☐ Ocean

Answer: Sun

Forms of Energy

1. Which is NOT a form of energy?

- ☐ Force
- ☐ Heat
- ☐ Light
- ☐ Chemical

Answer: Force

2. Mechanical energy is sum of?

- ☐ Kinetic and Potential energy
- ☐ Heat and Light
- ☐ Chemical and Electrical
- ☐ Sound and Heat

Answer: Kinetic and Potential energy

3. Energy stored in a battery is?

- ☐ Chemical energy
- ☐ Kinetic energy
- ☐ Heat energy
- ☐ Mechanical energy

Answer: Chemical energy

4. Energy from a bulb includes?

- ☐ Light and heat
- ☐ Sound only
- ☐ Kinetic only
- ☐ Potential only

Answer: Light and heat

5. Energy of a moving car is?

- ☐ Kinetic energy
- ☐ Potential energy
- ☐ Chemical energy
- ☐ Nuclear energy

Answer: Kinetic energy

Kinetic Energy

1. Kinetic energy is due to?

- ☐ Motion
- ☐ Position
- ☐ Shape
- ☐ Temperature

Answer: Motion

2. A faster moving object has?

- ☐ More kinetic energy
- ☐ Less kinetic energy
- ☐ Zero kinetic energy
- ☐ Same energy

Answer: More kinetic energy

3. Which possesses kinetic energy?

- ☐ Blowing wind
- ☐ Stretched bow
- ☐ Water in dam
- ☐ Compressed spring

Answer: Blowing wind

4. Kinetic energy depends on?

- ☐ Mass and velocity
- ☐ Mass and height
- ☐ Weight and height
- ☐ Force and time

Answer: Mass and velocity

5. Can kinetic energy be negative?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only in space

Answer: No

Formula for Kinetic Energy

1. Formula for kinetic energy is?

- ☐ $\frac{1}{2} mv^2$
- ☐ mgh
- ☐ mv
- ☐ ma

Answer: $\frac{1}{2} mv^2$

2. If mass doubles, kinetic energy?

- ☐ Doubles
- ☐ Halves
- ☐ Quadruples
- ☐ Remains same

Answer: Doubles

3. If velocity doubles, kinetic energy?

- ☐ Quadruples
- ☐ Doubles
- ☐ Halves
- ☐ Triples

Answer: Quadruples

4. Work done to stop a moving object equals?

- ☐ Its kinetic energy
- ☐ Its potential energy
- ☐ Its mass
- ☐ Its weight

Answer: Its kinetic energy

5. If velocity is zero, kinetic energy is?

- ☐ Zero
- ☐ Infinite
- ☐ Equal to mass
- ☐ Maximum

Answer: Zero

Potential Energy

1. Potential energy is due to?

- ☐ Position or configuration
- ☐ Motion
- ☐ Speed
- ☐ Time

Answer: Position or configuration

2. Energy in a stretched rubber band is?

- ☐ Potential energy
- ☐ Kinetic energy
- ☐ Heat energy
- ☐ Sound energy

Answer: Potential energy

3. Water stored in a dam has?

- ☐ Potential energy
- ☐ Kinetic energy
- ☐ Electrical energy
- ☐ Solar energy

Answer: Potential energy

4. Winding a toy car stores energy in its?

- ☐ Spring
- ☐ Wheels
- ☐ Body
- ☐ Key

Answer: Spring

5. Released arrow from a bow gets energy from?

- ☐ Potential energy of bow
- ☐ Kinetic energy of hand
- ☐ Gravity
- ☐ Wind

Answer: Potential energy of bow

Potential Energy of an Object at a Height

1. Formula for gravitational potential energy is?

- ☐ mgh
- ☐ $\frac{1}{2}mv^2$
- ☐ ma
- ☐ mg

Answer: mgh

2. Work done against gravity depends on?

- ☐ Vertical height difference
- ☐ Path taken
- ☐ Time taken
- ☐ Speed of lifting

Answer: Vertical height difference

3. If height doubles, potential energy?

- ☐ Doubles
- ☐ Halves
- ☐ Quadruples
- ☐ Remains same

Answer: Doubles

4. Energy is gained because work is done against?

- ☐ Gravity
- ☐ Friction
- ☐ Air resistance
- ☐ Magnetism

Answer: Gravity

5. The value of g is approximately?

- ☐ 9.8 m/s^2
- ☐ 100 m/s^2
- ☐ 1 m/s^2
- ☐ 0.1 m/s^2

Answer: 9.8 m/s^2

Interconversion of Energy

1. Can energy change forms?

- ☐ Yes
- ☐ No
- ☐ Only in machines
- ☐ Never

Answer: Yes

2. Green plants convert solar energy to?

- ☐ Chemical energy
- ☐ Kinetic energy
- ☐ Heat energy
- ☐ Nuclear energy

Answer: Chemical energy

3. An electric iron converts electrical energy to?

- ☐ Heat energy
- ☐ Sound energy
- ☐ Chemical energy
- ☐ Potential energy

Answer: Heat energy

4. Hydroelectric plants convert potential energy of water to?

- ☐ Electrical energy
- ☐ Chemical energy
- ☐ Nuclear energy
- ☐ Solar energy

Answer: Electrical energy

5. Burning coal converts chemical energy to?

- ☐ Heat and light
- ☐ Electricity only
- ☐ Sound
- ☐ Potential energy

Answer: Heat and light

Law of Conservation of Energy

1. Law of Conservation of Energy states energy can?

- ☐ Neither be created nor destroyed
- ☐ Be created
- ☐ Be destroyed
- ☐ Disappear

Answer: Neither be created nor destroyed

2. Total energy during transformation?

- ☐ Remains constant
- ☐ Increases
- ☐ Decreases
- ☐ Becomes zero

Answer: Remains constant

3. During free fall, potential energy converts to?

- ☐ Kinetic energy
- ☐ Heat energy
- ☐ Sound energy
- ☐ Chemical energy

Answer: Kinetic energy

4. Sum of kinetic and potential energy is?

- ☐ Mechanical energy
- ☐ Total energy
- ☐ Chemical energy
- ☐ Heat energy

Answer: Mechanical energy

5. Just before hitting ground, a falling object has maximum?

- ☐ Kinetic energy
- ☐ Potential energy
- ☐ Height
- ☐ Rest

Answer: Kinetic energy

Rate of Doing Work (Power)

1. Power is defined as?

- ☐ Rate of doing work
- ☐ Capacity to do work
- ☐ Total work done
- ☐ Force applied

Answer: Rate of doing work

2. Formula for power is?

- ☐ Work / Time
- ☐ Work x Time
- ☐ Force x Dist
- ☐ Mass x Vel

Answer: Work / Time

3. SI unit of power is?

- ☐ Watt
- ☐ Joule
- ☐ Newton
- ☐ Pascal

Answer: Watt

4. 1 Watt equals?

- ☐ 1 Joule/second
- ☐ 1 Joule/minute
- ☐ 1 Newton/meter
- ☐ 1 kg m/s

Answer: 1 Joule/second

5. 1 kilowatt equals?

- ☐ 1000 Watts
- ☐ 100 Watts
- ☐ 10 Watts
- ☐ 10000 Watts

Answer: 1000 Watts

Commercial Unit of Energy

1. Commercial unit of energy is?

- ☐ Kilowatt-hour (kWh)
- ☐ Joule
- ☐ Watt
- ☐ Newton

Answer: Kilowatt-hour (kWh)

2. 1 kWh is commonly known as?

- ☐ 1 unit
- ☐ 1 volt
- ☐ 1 amp
- ☐ 1 degree

Answer: 1 unit

3. 1 kWh equals how many Joules?

- ☐ $3.6 \times 10^6 \text{ J}$
- ☐ 1000 J
- ☐ 3600 J
- ☐ 10^6 J

Answer: $3.6 \times 10^6 \text{ J}$

4. Energy used by 1000W appliance in 1 hour is?

- ☐ 1 kWh
- ☐ 100 kWh
- ☐ 0.1 kWh
- ☐ 10 kWh

Answer: 1 kWh

5. Is kWh a unit of power or energy?

- ☐ Energy
- ☐ Power
- ☐ Force
- ☐ Time

Answer: Energy

Chapter 11: Sound

Production of Sound

1. Sound is produced by?

- ☐ Vibrating objects
- ☐ Moving objects
- ☐ Stationary objects
- ☐ Heated objects

Answer: Vibrating objects

2. Vibration is a?

- ☐ Rapid to and fro motion
- ☐ Slow circular motion
- ☐ Linear motion
- ☐ Random motion

Answer: Rapid to and fro motion

3. Human voice is produced by vibrations in?

- ☐ Vocal cords
- ☐ Tongue
- ☐ Lips
- ☐ Lungs

Answer: Vocal cords

4. Can sound be produced without vibration?

- ☐ No
- ☐ Yes
- ☐ Sometimes
- ☐ Only in space

Answer: No

5. Which energy is required to produce sound?

- ☐ Mechanical energy
- ☐ Heat energy
- ☐ Light energy
- ☐ Chemical energy

Answer: Mechanical energy

Propagation of Sound

1. Substance through which sound travels is called?

- ☐ Medium
- ☐ Vacuum
- ☐ Ether
- ☐ Space

Answer: Medium

2. Can sound travel through vacuum?

- ☐ No
- ☐ Yes
- ☐ Only high frequency
- ☐ Only low frequency

Answer: No

3. In sound propagation, what travels?

- ☐ Disturbance/Energy
- ☐ Particles of medium
- ☐ Source of sound
- ☐ Air

Answer: Disturbance/Energy

4. Do particles of medium travel to the ear?

- ☐ No, they oscillate
- ☐ Yes
- ☐ Sometimes
- ☐ Only in solids

Answer: No, they oscillate

5. Sound is a?

- ☐ Mechanical wave
- ☐ Electromagnetic wave
- ☐ Transverse wave
- ☐ Light wave

Answer: Mechanical wave

Sound Waves are Longitudinal

1. A region of high pressure is called?

- ☐ Compression
- ☐ Rarefaction
- ☐ Crest
- ☐ Trough

Answer: Compression

2. A region of low pressure is called?

- ☐ Rarefaction
- ☐ Compression
- ☐ Valley
- ☐ Peak

Answer: Rarefaction

3. In longitudinal waves, particles move?

- ☐ Parallel to wave direction
- ☐ Perpendicular to wave direction
- ☐ In circles
- ☐ Randomly

Answer: Parallel to wave direction

4. Sound waves in air are?

- ☐ Longitudinal
- ☐ Transverse
- ☐ Electromagnetic
- ☐ None

Answer: Longitudinal

5. Light is a?

- ☐ Transverse wave
- ☐ Longitudinal wave
- ☐ Mechanical wave
- ☐ Sound wave

Answer: Transverse wave

Characteristics of a Sound Wave

1. A peak in the sound wave curve represents?

- ☐ Maximum compression
- ☐ Maximum rarefaction
- ☐ Minimum density
- ☐ Zero pressure

Answer: Maximum compression

2. A valley in the sound wave curve represents?

- ☐ Maximum rarefaction
- ☐ Maximum compression
- ☐ High pressure
- ☐ Crest

Answer: Maximum rarefaction

3. Which characteristic distinguishes sound waves?

- ☐ Frequency, Amplitude, Speed
- ☐ Mass, Volume, Density
- ☐ Color, Shape, Size
- ☐ Heat, Light, Electricity

Answer: Frequency, Amplitude, Speed

4. Compressions are regions of?

- ☐ High density and pressure
- ☐ Low density and pressure
- ☐ Zero density
- ☐ Low pressure

Answer: High density and pressure

5. Rarefactions are regions where particles are?

- ☐ Spread apart
- ☐ Crowded
- ☐ Stationary
- ☐ Fast

Answer: Spread apart

Wavelength and Frequency

1. Distance between two consecutive compressions is?

- ☐ Wavelength
- ☐ Frequency
- ☐ Amplitude
- ☐ Speed

Answer: Wavelength

2. SI unit of wavelength is?

- ☐ Metre
- ☐ Hertz
- ☐ Second
- ☐ Pascal

Answer: Metre

3. Number of oscillations per unit time is?

- ☐ Frequency
- ☐ Time period
- ☐ Wavelength
- ☐ Speed

Answer: Frequency

4. SI unit of frequency is?

- ☐ Hertz
- ☐ Metre
- ☐ Second
- ☐ Decibel

Answer: Hertz

5. Relation between frequency (ν) and time period (T) is?

- ☐ $\nu = 1/T$
- ☐ $\nu = T$
- ☐ $\nu = T^2$
- ☐ $\nu = 1/T^2$

Answer: $\nu = 1/T$

Pitch and Loudness

1. Pitch determines?

- ☐ Shrillness of sound
- ☐ Loudness
- ☐ Quality
- ☐ Speed

Answer: Shrillness of sound

2. Pitch depends on?

- ☐ Frequency
- ☐ Amplitude
- ☐ Speed
- ☐ Medium

Answer: Frequency

3. Loudness depends on?

- ☐ Amplitude
- ☐ Frequency
- ☐ Wavelength
- ☐ Time period

Answer: Amplitude

4. Higher amplitude means?

- ☐ Louder sound
- ☐ Higher pitch
- ☐ Lower pitch
- ☐ Softer sound

Answer: Louder sound

5. Single frequency sound is called?

- ☐ Tone
- ☐ Note
- ☐ Noise
- ☐ Music

Answer: Tone

Speed of Sound

1. Formula for speed of sound is?

- ☐ $v = \text{wavelength} \times \text{frequency}$
- ☐ $v = \text{wavelength} / \text{frequency}$
- ☐ $v = \text{frequency} / \text{wavelength}$
- ☐ $v = \text{wavelength} + \text{frequency}$

Answer: $v = \text{wavelength} \times \text{frequency}$

2. Speed of sound depends on?

- ☐ Properties of medium
- ☐ Source of sound
- ☐ Frequency only
- ☐ Amplitude only

Answer: Properties of medium

3. Speed of sound is maximum in?

- ☐ Solids
- ☐ Liquids
- ☐ Gases
- ☐ Vacuum

Answer: Solids

4. Speed of sound in air at 22°C is approx?

- ☐ 344 m/s
- ☐ 330 m/s
- ☐ 1500 m/s
- ☐ 5000 m/s

Answer: 344 m/s

5. As temperature increases, speed of sound?

- ☐ Increases
- ☐ Decreases
- ☐ Remains same
- ☐ Becomes zero

Answer: Increases

Reflection of Sound

1. Does sound reflect like light?

- ☐ Yes
- ☐ No
- ☐ Only in water
- ☐ Only in vacuum

Answer: Yes

2. Angle of incidence equals?

- ☐ Angle of reflection
- ☐ Angle of refraction
- ☐ 90 degrees
- ☐ 0 degrees

Answer: Angle of reflection

3. Reflection of sound requires?

- ☐ Large obstacle
- ☐ Small obstacle
- ☐ Transparent medium
- ☐ Vacuum

Answer: Large obstacle

4. Law of reflection holds for?

- ☐ Sound and light
- ☐ Only light
- ☐ Only sound
- ☐ Neither

Answer: Sound and light

5. Incident sound, reflected sound and normal lie in?

- ☐ Same plane
- ☐ Different planes
- ☐ Perpendicular planes
- ☐ Parallel planes

Answer: Same plane

Echo

1. Repetition of sound due to reflection is?

- ☐ Echo
- ☐ Reverberation
- ☐ Noise
- ☐ Note

Answer: Echo

2. Minimum time interval to hear echo is?

- ☐ 0.1 s
- ☐ 1 s
- ☐ 0.01 s
- ☐ 0.5 s

Answer: 0.1 s

3. Minimum distance for echo at 22°C is?

- ☐ 17.2 m
- ☐ 34.4 m
- ☐ 10 m
- ☐ 100 m

Answer: 17.2 m

4. Why 0.1 s?

- ☐ Persistence of hearing
- ☐ Speed of light
- ☐ Brain processing
- ☐ Ear drum limit

Answer: Persistence of hearing

5. Rolling of thunder is due to?

- ☐ Multiple reflections
- ☐ Single reflection
- ☐ Refraction
- ☐ Interference

Answer: Multiple reflections

Reverberation

1. Persistence of sound in a hall is called?

- ☐ Reverberation
- ☐ Echo
- ☐ Resonance
- ☐ Vibration

Answer: Reverberation

2. Reverberation is caused by?

- ☐ Repeated reflection
- ☐ Refraction
- ☐ Absorption
- ☐ Diffraction

Answer: Repeated reflection

3. To reduce reverberation, we use?

- ☐ Sound-absorbent materials
- ☐ Mirrors
- ☐ Metal sheets
- ☐ Glass

Answer: Sound-absorbent materials

4. Excessive reverberation is?

- ☐ Undesirable
- ☐ Desirable
- ☐ Good for music
- ☐ Necessary

Answer: Undesirable

5. Example of sound absorbent is?

- ☐ Compressed fibreboard
- ☐ Steel
- ☐ Marble
- ☐ Plastic

Answer: Compressed fibreboard

Uses of Multiple Reflection

1. Which instrument uses multiple reflection?

- ☐ Megaphone
- ☐ Guitar
- ☐ Drum
- ☐ Flute

Answer: Megaphone

2. Stethoscopes work on the principle of?

- ☐ Multiple reflection
- ☐ Refraction
- ☐ Interference
- ☐ Doppler effect

Answer: Multiple reflection

3. Why are concert hall ceilings curved?

- ☐ To reflect sound to all corners
- ☐ For decoration
- ☐ To absorb sound
- ☐ To reduce echo

Answer: To reflect sound to all corners

4. Sound board in halls helps to?

- ☐ Spread sound evenly
- ☐ Absorb sound
- ☐ Stop sound
- ☐ Increase pitch

Answer: Spread sound evenly

5. Horns and trumpets send sound in?

- ☐ Particular direction
- ☐ All directions
- ☐ Backward direction
- ☐ Upward direction

Answer: Particular direction

Range of Hearing

1. Audible range for humans is?

- ☐ 20 Hz to 20000 Hz
- ☐ 0 to 20 Hz
- ☐ Above 20000 Hz
- ☐ 10 to 100 Hz

Answer: 20 Hz to 20000 Hz

2. Children under five can hear up to?

- ☐ 25 kHz
- ☐ 10 kHz
- ☐ 50 kHz
- ☐ 100 kHz

Answer: 25 kHz

3. As people grow older, ears become less sensitive to?

- ☐ Higher frequencies
- ☐ Lower frequencies
- ☐ Middle frequencies
- ☐ All frequencies

Answer: Higher frequencies

4. 1 kHz equals?

- ☐ 1000 Hz
- ☐ 100 Hz
- ☐ 10 Hz
- ☐ 10000 Hz

Answer: 1000 Hz

5. Dogs can hear?

- ☐ Ultrasound
- ☐ Only infrasound
- ☐ Only low pitch
- ☐ Nothing

Answer: Ultrasound

Infrasound and Ultrasound

1. Sound below 20 Hz is?

- ☐ Infrasound
- ☐ Ultrasound
- ☐ Audible sound
- ☐ Noise

Answer: Infrasound

2. Sound above 20 kHz is?

- ☐ Ultrasound
- ☐ Infrasound
- ☐ Sonic
- ☐ Subsonic

Answer: Ultrasound

3. Which animal produces infrasound?

- ☐ Rhinoceros
- ☐ Bat
- ☐ Dolphin
- ☐ Rat

Answer: Rhinoceros

4. Which animal produces ultrasound?

- ☐ Bat
- ☐ Elephant
- ☐ Whale
- ☐ Rhino

Answer: Bat

5. Earthquakes produce?

- ☐ Low-frequency infrasound
- ☐ High-frequency ultrasound
- ☐ Audible sound only
- ☐ No sound

Answer: Low-frequency infrasound

Applications of Ultrasound

1. Ultrasound is used for cleaning because?

- ☐ High frequency detaches dirt
- ☐ It is hot
- ☐ It is loud
- ☐ It is chemical

Answer: High frequency detaches dirt

2. To detect cracks in metal blocks, we use?

- ☐ Ultrasound
- ☐ Infrasound
- ☐ X-rays
- ☐ Light

Answer: Ultrasound

3. If there is a flaw in metal, ultrasound?

- ☐ Reflects back
- ☐ Passes through
- ☐ Absorbs
- ☐ Speeds up

Answer: Reflects back

4. Ordinary sound is not used for flaw detection because?

- ☐ It bends around corners
- ☐ It is too fast
- ☐ It is too slow
- ☐ It is weak

Answer: It bends around corners

5. Ultrasound travels along?

- ☐ Well-defined paths
- ☐ Random paths
- ☐ Curved paths
- ☐ Zigzag paths

Answer: Well-defined paths

Medical Applications

1. Technique to image the heart is?

- ☐ Echocardiography
- ☐ ECG
- ☐ EEG
- ☐ X-ray

Answer: Echocardiography

2. Ultrasonography is used for?

- ☐ Getting images of internal organs
- ☐ Cleaning teeth
- ☐ Hearing aid
- ☐ Measuring height

Answer: Getting images of internal organs

3. Ultrasound can break kidney stones into?

- ☐ Fine grains
- ☐ Large pieces
- ☐ Gas
- ☐ Liquid

Answer: Fine grains

4. Ultrasonography uses?

- ☐ Ultrasonic waves
- ☐ Infrasonic waves
- ☐ Radio waves
- ☐ Light waves

Answer: Ultrasonic waves

5. Examination of foetus is done by?

- ☐ Ultrasonography
- ☐ X-ray
- ☐ CT Scan
- ☐ MRI

Answer: Ultrasonography

Chapter 12: Improvement in Food Resources

Introduction to Food Resources

1. What do all living organisms need for development and health?

- ☐ Food
- ☐ Shelter
- ☐ Clothing
- ☐ Entertainment

Answer: Food

2. What are the major sources of food for humans?

- ☐ Plants and animals
- ☐ Rocks and minerals
- ☐ Air and water
- ☐ Chemicals

Answer: Plants and animals

3. Why is it necessary to increase production efficiency?

- ☐ Limited land for cultivation
- ☐ Unlimited land
- ☐ Decreasing population
- ☐ None of the above

Answer: Limited land for cultivation

4. Increasing food production should be done without?

- ☐ Degrading the environment
- ☐ Using water
- ☐ Using seeds
- ☐ Using labor

Answer: Degrading the environment

5. Sustainable practices are needed in?

- ☐ Agriculture and animal husbandry
- ☐ Mining
- ☐ Construction
- ☐ Manufacturing

Answer: Agriculture and animal husbandry

Improvement in Crop Yields

1. Which crop provides carbohydrates?

- ☐ Wheat
- ☐ Gram
- ☐ Mustard
- ☐ Soyabean

Answer: Wheat

2. Pulses are a good source of?

- ☐ Protein
- ☐ Fats
- ☐ Carbohydrates
- ☐ Vitamins

Answer: Protein

3. Kharif crops are grown in which season?

- ☐ Rainy season
- ☐ Winter season
- ☐ Summer season
- ☐ Spring season

Answer: Rainy season

4. Which of these is a Rabi crop?

- ☐ Wheat
- ☐ Paddy
- ☐ Maize
- ☐ Cotton

Answer: Wheat

5. From 1952 to 2010, food grain production increased by?

- ☐ Four times
- ☐ Two times
- ☐ Ten times
- ☐ No increase

Answer: Four times

Crop Variety Improvement

1. How can desirable characters be incorporated into crop varieties?

- ☐ Hybridisation
- ☐ Irrigation
- ☐ Weeding
- ☐ Harvesting

Answer: Hybridisation

2. Genetically modified crops are produced by?

- ☐ Introducing a gene
- ☐ Adding manure
- ☐ Changing soil
- ☐ Adding water

Answer: Introducing a gene

3. Which is a biotic resistance factor?

- ☐ Resistance to insects
- ☐ Resistance to drought
- ☐ Resistance to heat
- ☐ Resistance to salinity

Answer: Resistance to insects

4. Why is short maturity duration desirable?

- ☐ It is economical and allows multiple rounds of crops
- ☐ It reduces yield
- ☐ It increases cost
- ☐ It requires more water

Answer: It is economical and allows multiple rounds of crops

5. Developing varieties for wider adaptability helps in?

- ☐ Stabilising crop production
- ☐ Reducing production
- ☐ Limiting growth
- ☐ None of the above

Answer: Stabilising crop production

Crop Production Management

1. Farming practices are decided by?

- ☐ Farmer's purchasing capacity
- ☐ Weather only
- ☐ Soil color
- ☐ Seed size

Answer: Farmer's purchasing capacity

2. Nutrients are supplied to plants by?

- ☐ Air, water, and soil
- ☐ Only soil
- ☐ Only water
- ☐ Only air

Answer: Air, water, and soil

3. How many nutrients does soil supply to plants?

- ☐ Thirteen
- ☐ Six
- ☐ Seven
- ☐ Two

Answer: Thirteen

4. Nutrients required in large quantities are called?

- ☐ Macronutrients
- ☐ Micronutrients
- ☐ Trace elements
- ☐ Essential elements

Answer: Macronutrients

5. Which of these is a macronutrient?

- ☐ Nitrogen
- ☐ Iron
- ☐ Zinc
- ☐ Copper

Answer: Nitrogen

Nutrient Management

1. Which of these is a micronutrient?

- ☐ Iron
- ☐ Calcium
- ☐ Magnesium
- ☐ Potassium

Answer: Iron

2. Deficiency of nutrients affects?

- ☐ Physiological processes
- ☐ Color of soil
- ☐ Size of field
- ☐ Amount of rain

Answer: Physiological processes

3. To increase yield, soil can be enriched with?

- ☐ Manure and fertilizers
- ☐ Plastic
- ☐ Sand
- ☐ Stones

Answer: Manure and fertilizers

4. What is the source of Carbon for plants?

- ☐ Air
- ☐ Soil
- ☐ Water
- ☐ Fertilizer

Answer: Air

5. What is the source of Hydrogen for plants?

- ☐ Water
- ☐ Air
- ☐ Soil
- ☐ Sunlight

Answer: Water

Manure

1. Manure is prepared by the decomposition of?

- ☐ Animal excreta and plant waste
- ☐ Chemicals
- ☐ Rocks
- ☐ Plastic

Answer: Animal excreta and plant waste

2. Manure helps in enriching soil with?

- ☐ Nutrients and organic matter
- ☐ Chemicals
- ☐ Pests
- ☐ Weeds

Answer: Nutrients and organic matter

3. In sandy soils, organic matter helps in?

- ☐ Increasing water holding capacity
- ☐ Drainage
- ☐ Aeration
- ☐ None of the above

Answer: Increasing water holding capacity

4. Which manure uses earthworms?

- ☐ Vermi-compost
- ☐ Green manure
- ☐ Compost
- ☐ Fertilizer

Answer: Vermi-compost

5. Green manure enriches soil mainly in?

- ☐ Nitrogen and phosphorus
- ☐ Iron and zinc
- ☐ Calcium and magnesium
- ☐ Carbon and oxygen

Answer: Nitrogen and phosphorus

Fertilizers

1. Fertilizers mainly supply?

- ☐ Nitrogen, phosphorus, and potassium
- ☐ Carbon, hydrogen, oxygen
- ☐ Iron, zinc, copper
- ☐ Calcium, magnesium, sulphur

Answer: Nitrogen, phosphorus, and potassium

2. Excessive use of fertilizers can lead to?

- ☐ Water pollution
- ☐ Soil enrichment
- ☐ Better microbial life
- ☐ Less weeds

Answer: Water pollution

3. Continuous use of fertilizers can destroy?

- ☐ Soil fertility
- ☐ Pests
- ☐ Weeds
- ☐ Crops

Answer: Soil fertility

4. Organic farming involves?

- ☐ Minimal or no use of chemicals
- ☐ Maximum use of chemicals
- ☐ No manure
- ☐ No irrigation

Answer: Minimal or no use of chemicals

5. Fertilizers ensure good?

- ☐ Vegetative growth
- ☐ Root rot
- ☐ Weed growth
- ☐ Pest growth

Answer: Vegetative growth

Irrigation

1. Most agriculture in India is?

- ☐ Rain-fed
- ☐ Canal-fed
- ☐ Well-fed
- ☐ Tank-fed

Answer: Rain-fed

2. Wells that tap water from deeper strata are?

- ☐ Tube wells
- ☐ Dug wells
- ☐ Canals
- ☐ Tanks

Answer: Tube wells

3. River lift systems are used where?

- ☐ Canal flow is insufficient
- ☐ Rain is heavy
- ☐ Groundwater is high
- ☐ Soils are sandy

Answer: Canal flow is insufficient

4. Rainwater harvesting increases?

- ☐ Ground water levels
- ☐ River flow
- ☐ Sea level
- ☐ Rainfall

Answer: Ground water levels

5. Check-dams help to?

- ☐ Reduce soil erosion
- ☐ Increase flooding
- ☐ Increase evaporation
- ☐ Reduce crop yield

Answer: Reduce soil erosion

Cropping Patterns

1. Growing two or more crops simultaneously on the same land is?

- ☐ Mixed cropping
- ☐ Crop rotation
- ☐ Monoculture
- ☐ Fallow land

Answer: Mixed cropping

2. Growing crops in a definite row pattern is?

- ☐ Inter-cropping
- ☐ Mixed cropping
- ☐ Crop rotation
- ☐ Organic farming

Answer: Inter-cropping

3. Growing different crops in succession is?

- ☐ Crop rotation
- ☐ Mixed cropping
- ☐ Inter-cropping
- ☐ Hybridisation

Answer: Crop rotation

4. Inter-cropping ensures?

- ☐ Maximum utilisation of nutrients
- ☐ Maximum pests
- ☐ Minimum yield
- ☐ Soil erosion

Answer: Maximum utilisation of nutrients

5. Mixed cropping reduces?

- ☐ Risk of crop failure
- ☐ Yield
- ☐ Soil fertility
- ☐ Water availability

Answer: Risk of crop failure

Crop Protection Management

1. Xanthium and Parthenium are examples of?

- ☐ Weeds
- ☐ Crops
- ☐ Pests
- ☐ Fertilizers

Answer: Weeds

2. Weeds compete with crops for?

- ☐ Food, space, and light
- ☐ Oxygen
- ☐ Carbon dioxide
- ☐ Pollinators

Answer: Food, space, and light

3. Insect pests affect crop health by?

- ☐ Cutting parts and sucking sap
- ☐ Pollinating flowers
- ☐ Adding nutrients
- ☐ Aerating soil

Answer: Cutting parts and sucking sap

4. Diseases in plants are caused by?

- ☐ Pathogens
- ☐ Weeds
- ☐ Fertilizers
- ☐ Water

Answer: Pathogens

5. Summer ploughing is a method for?

- ☐ Weed and pest control
- ☐ Irrigation
- ☐ Harvesting
- ☐ Sowing

Answer: Weed and pest control

Storage of Grains

1. Which is a biotic factor causing storage loss?

- ☐ Insects
- ☐ Temperature
- ☐ Moisture
- ☐ Container material

Answer: Insects

2. Which is an abiotic factor causing storage loss?

- ☐ Moisture
- ☐ Rodents
- ☐ Fungi
- ☐ Mites

Answer: Moisture

3. Storage losses lead to?

- ☐ Poor germinability and quality
- ☐ Better taste
- ☐ Increased weight
- ☐ Higher price

Answer: Poor germinability and quality

4. A preventive measure for storage is?

- ☐ Strict cleaning and proper drying
- ☐ Wetting the grains
- ☐ Leaving grains in open
- ☐ Mixing with soil

Answer: Strict cleaning and proper drying

5. Chemicals used to kill pests in storage are called?

- ☐ Fumigants
- ☐ Fertilizers
- ☐ Manure
- ☐ Irrigants

Answer: Fumigants

Animal Husbandry & Cattle Farming

1. Milk-producing females are called?

- ☐ Milch animals
- ☐ Draught animals
- ☐ Broilers
- ☐ Layers

Answer: Milch animals

2. Exotic breeds like Jersey are selected for?

- ☐ Long lactation periods
- ☐ Disease resistance
- ☐ Hard work
- ☐ Small size

Answer: Long lactation periods

3. Local breeds like Red Sindhi are known for?

- ☐ Disease resistance
- ☐ Long lactation
- ☐ High milk yield
- ☐ Fast growth

Answer: Disease resistance

4. Roughage in animal feed is largely?

- ☐ Fibre
- ☐ Protein
- ☐ Fat
- ☐ Vitamin

Answer: Fibre

5. Flukes damage which part of cattle?

- ☐ Liver
- ☐ Stomach
- ☐ Skin
- ☐ Lungs

Answer: Liver

Poultry Farming

1. Poultry farming is undertaken for?

- ☐ Egg and meat production
- ☐ Milk production
- ☐ Wool production
- ☐ Honey production

Answer: Egg and meat production

2. Birds grown for meat are called?

- ☐ Broilers
- ☐ Layers
- ☐ Milch animals
- ☐ Draught animals

Answer: Broilers

3. Broiler feed is rich in?

- ☐ Protein and fat
- ☐ Fibre
- ☐ Carbohydrates only
- ☐ Water

Answer: Protein and fat

4. A desirable trait in poultry cross-breeding is?

- ☐ Summer adaptation
- ☐ Low egg production
- ☐ High maintenance
- ☐ Large size

Answer: Summer adaptation

5. Layers are raised for?

- ☐ Eggs
- ☐ Meat
- ☐ Feathers
- ☐ Labour

Answer: Eggs

Fish Production

1. Obtaining fish from natural resources is called?

- ☐ Capture fishing
- ☐ Culture fishery
- ☐ Aquaculture
- ☐ Mariculture

Answer: Capture fishing

2. Farming marine fish is called?

- ☐ Mariculture
- ☐ Aquaculture
- ☐ Apiculture
- ☐ Sericulture

Answer: Mariculture

3. In composite fish culture, how many species are used?

- ☐ Five or six
- ☐ Only one
- ☐ Two
- ☐ Ten

Answer: Five or six

4. Catlas are?

- ☐ Surface feeders
- ☐ Bottom feeders
- ☐ Middle-zone feeders
- ☐ Weed feeders

Answer: Surface feeders

5. A major problem in fish farming is?

- ☐ Lack of quality seed
- ☐ Too much water
- ☐ Too much food
- ☐ Lack of space

Answer: Lack of quality seed

Bee-keeping

1. Apis cerana indica is known as?

- ☐ Indian bee
- ☐ Rock bee
- ☐ Little bee
- ☐ Italian bee

Answer: Indian bee

2. Which variety is commonly used for commercial honey production?

- ☐ Italian bee (*A. mellifera*)
- ☐ Rock bee
- ☐ Little bee
- ☐ Indian bee

Answer: Italian bee (*A. mellifera*)

3. Pasturage refers to?

- ☐ Flowers available for nectar and pollen
- ☐ Beehive structure
- ☐ Honey extractor
- ☐ Bee wax

Answer: Flowers available for nectar and pollen

4. Bee-keeping is done to obtain?

- ☐ Honey and wax
- ☐ Milk
- ☐ Silk
- ☐ Wool

Answer: Honey and wax

5. Italian bees are known for?

- ☐ High honey collection capacity
- ☐ Stinging more
- ☐ Staying for short periods
- ☐ Poor breeding

Answer: High honey collection capacity