



Narsee Monjee Educational Trust's
JAMNABAI NARSEE SCHOOL
Knowledge is Strength Supreme

SCIENCE WORKBOOK

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CHAPTER 1 – MATTER

1. Choose the correct option from the box given below and fill in the blanks.

- Anything that has mass and occupies space is called _____.
- When you add heat energy to matter, the particles move _____ and the matter _____.
- Particles in a solid are packed so close together they can only _____.
- Inter particle space in gases is _____.
- The boiling point of water is _____.

2. State the correct answers from A, B, C, D, E or F in list II which represents the change of states of matter or its relevant property from list I.

List I	List II
a. Solid "X" to liquid "Y"	A. Condensation
b. Liquid "Y" to its vapour "Z"	B. Melting
c. Vapour "Z" to liquid "Y"	C. Vapourisation
d. The temperature at which liquid "Y" to its vapour "Z"	D. Freezing
e. The temperature at which solid "X" to liquid "Y"	E. Melting point
	F. Boiling point

List I	a	b	c	d	e
List II					

3. State the Differences between boiling and evaporation.

Boiling	Evaporation



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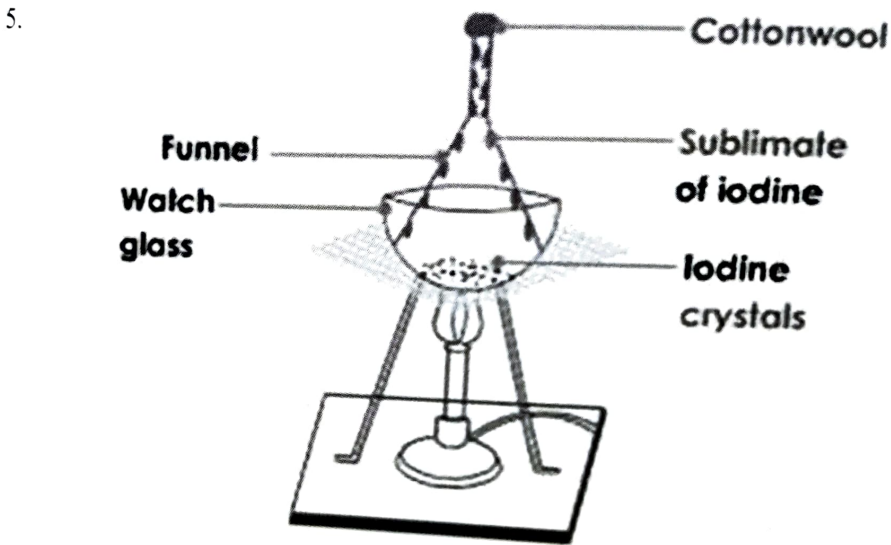
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CHAPTER 1 – MATTER

4. **Classify the following as physical or chemical change.**

Baking a cake, crushing a metal can, rotting of banana, chopping of wood, iron rusting, souring of milk, dissolving sugar in water, breaking of glass.

Physical change	Chemical change



Based on the observation seen in the above experiment:

- a. What would you comment on the interparticle space in the above process? Justify your answer with a proper scientific reason.

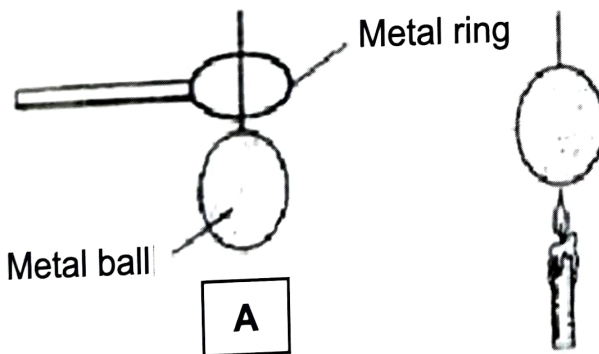
- b. Is this process a physical or a chemical change?



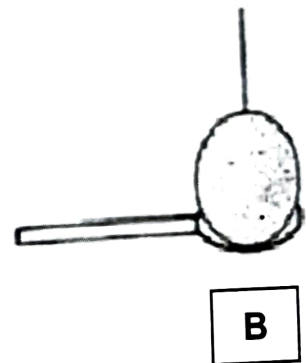
CHAPTER 1 – MATTER

6. 20gm of salt is added to a beaker containing 100ml of water.
What will happen to the level of water? Justify your answer with a proper scientific reason.

7.



Before heating



After heating

In the ball and experiment shown above – state why the result of “A” and “B” are different?



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CHAPTER 2 – PHYSICAL QUANTITIES AND MEASUREMENT

1. Fill in the blanks.

- The SI unit of mass is _____.
- The liquid used in most laboratory thermometer is _____.
- The thermometer used to measure human body temperature is called _____.
- The error in measurement due to wrong positioning of the eye is called _____.
- In a beam balance, when measures on both the pans are _____ the arms will be balanced.

2. Choose the correct option from the following:

- The branch of science which deals with measurement is _____.
 - Chemistry
 - Physics
 - Biology
 - Astronomy
- The upper fixed point of Celsius thermometer is _____.
 - 0°C
 - 100°C
 - 32°F
 - 180°C
- The SI unit of length is _____.
 - centimeter
 - metre
 - decimeter
 - kilometre
- In order to convert gram to kilogram, one needs to _____.
 - Multiply by 100
 - Multiply by 1000
 - Divide by 100
 - Divide by 1000
- How many degrees is a Fahrenheit scale divided into?
 - 180
 - 1000
 - 100
 - 1800



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CHAPTER 2 – PHYSICAL QUANTITIES AND MEASUREMENT

1. Cross the odd one out. Give a valid reason to support your answer.

i. Kilometre, thermometer, millimetre, centimetre

ii. Kilogram, ton, metre, second

iii. Day, hour, clock, minute

iv. Beam, pans, pointer, electronic balance

v. Capillary tube, bulb, stem, parallax error

4. Name three devices used for measuring length.

5. Name two units of mass less than kilograms.

6. What is parallax error? How can we avoid it?



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CHAPTER 2 – PHYSICAL QUANTITIES AND MEASUREMENT

7. Convert the following measurement of length.

i. 50 cm = _____ m

ii. 80 mm = _____ cm

iii. 7.5 km = _____ m

iv. 650 m = _____ km

8. Convert the following measurement of time.

i. 1 hour = _____ seconds.

ii. 1 century = _____ years.

iii. 1 millennium = _____ centuries.

iv. 3 weeks = _____ days.

9. Name few instruments used for measuring mass.

10. State the units used to measure the following:

i. Length of a tree _____

ii. Length of the pencil tip _____

iii. Distance between two cities _____

iv. Milk in a bottle _____

v. Body weight _____

5. Give reasons.

i. Body parts should not be used for the measurement.

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CHAPTER 2 – PHYSICAL QUANTITIES AND MEASUREMENT

- i. In a clinical thermometer, there is a kink in the capillary tube just above the bulb.

- ii. Stop watches are used in sports events.

- iii. Electronic balance is advantageous to use over a beam balance.



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CHAPTER 3 – FORCE

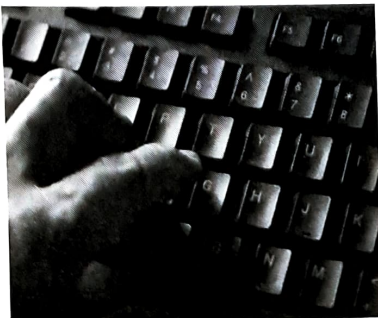
I. Fill in the blanks.

- A _____ is a push or pull acting on an object.
- Force cannot change the _____ of an object.
- Friction always opposes the _____.
- Friction produced between two objects in contact while at rest is called _____.
- Friction produces _____.

II. State whether the following statement are true or false.

- Tyres of vehicles are provided with grooved designs to decrease friction. ()
- A force always changes the direction of motion of an object. ()
- Friction between the feet and the ground helps us to walk steadily. ()
- Sliding friction makes sure an object does not continue to move forever when a force has acted on it. ()
- Sliding friction is less than rolling friction. ()

III. Write down whether the force applied in each case (shown in the picture) is a push or a pull.



(A) _____



(B) _____



(C) _____



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CHAPTER 3 – FORCE

IV. Name the kind of frictional force applied in each of the following actions:

Rubbing both hands together to create heat.	
Wheel rolls on the road.	
Parked car.	
A sledge sliding across snow or ice.	

V. Tick the most appropriate answer.

i. Which of the following is not an effect of force?

- a. Change in direction of an object.
- b. Change in the shape and size of an object.
- c. Change in the mass of an object.
- d. Change in the position of a stationary object.

ii. A car can skid on a wet road due to

- a. increased friction between the road and the tyres.
- b. streamlined shape of the car.
- c. reduced friction between the road and the tyres.
- d. both b and c

iii. Friction can be reduced by

- a. providing wheels.
- b. lubricating.
- c. streamlining.
- d. all of these

iv. Which among the following has the smallest magnitude?

- a. Sliding friction.
- b. Rolling friction
- c. Static friction
- d. Kinetic friction

v. The S.I. unit of force is

- a. kilogram
- b. newton
- c. Celsius
- d. metre

VI. Which effect of force can be seen in these pictures given below?



(B) _____



(A) _____



(C) _____



CHAPTER 3 – FORCE

VII Observe the following figure and mark the arrows to show the direction of motion and direction of force of friction.



Suggest one method by which the girl can push the box easily without applying much effort.

VIII Give reasons for the following:

i. It is easy to push a cart on a smooth road than on a rough road.

ii. Friction is a necessary evil.

iii. Boats and ships have streamlined shapes.



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CHAPTER 3 – FORCE

IX Answer the following questions:

i. Define friction. State any three important properties of friction.

ii. What happens to the speed of your bicycle when you

a. Pedal fast?

b. Apply brakes to it?

iii. Sam has to push a lighter box and Rachel has to push a similar size heavier box on the same floor. Who will have to apply a large force and why?

iv. Write any two advantages of friction.



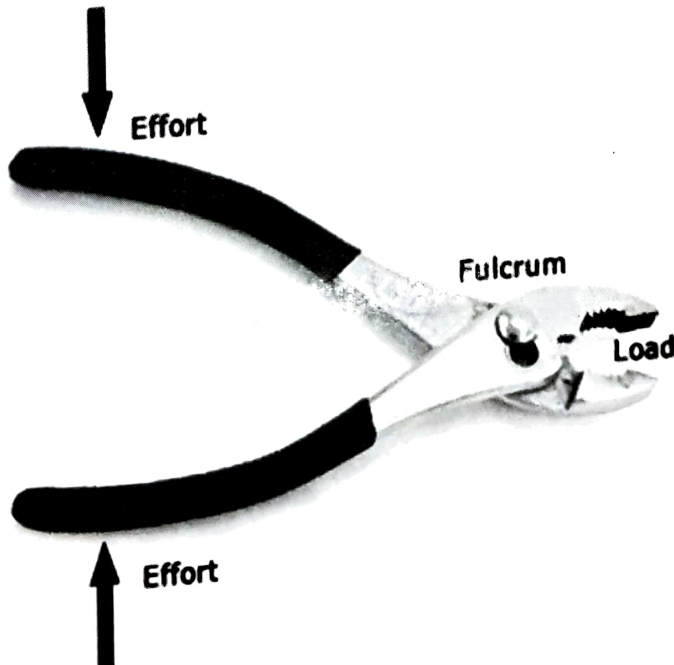
CHAPTER 4 – ENERGY: SIMPLE MACHINE

I. Name the following:

- i. An inclined plane wound into a spiral around a straight rod _____
- ii. A simple machine that has a set of two inclined planes that meet at a sharp or pointed edge _____
- iii. A tool that makes our work easier _____
- iv. The ratio of the load to the effort _____

II. Define a Lever. State the principle of a Lever.

III. Mark effort arm and load arm in the figure given below:





Name _____

Name _____

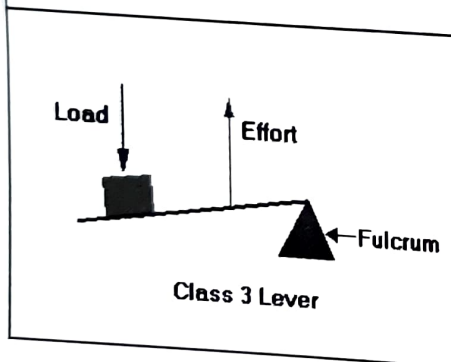
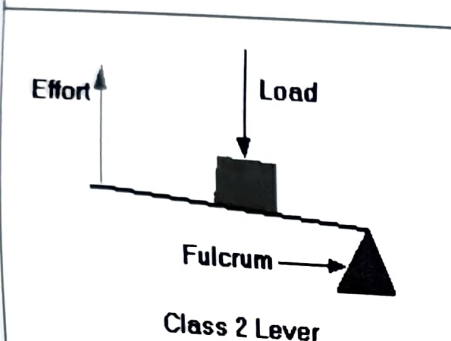
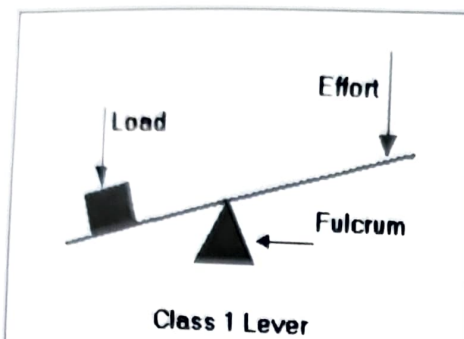
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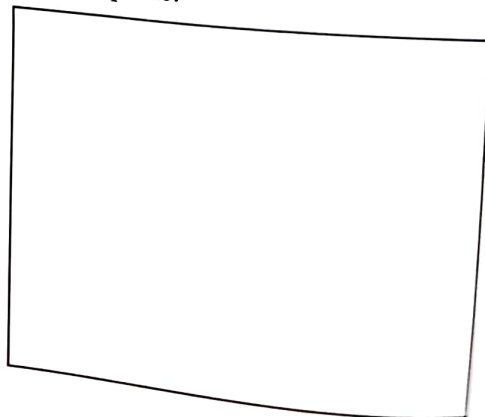
CHAPTER 4 – ENERGY: SIMPLE MACHINE

- IV. What is the relationship between load arm and effort arm in case of class - one, class - two and class - three levers? Write the mechanical advantage in each case.



- V. What is an Inclined plane? Make a diagram of an inclined plane.

Ans.





Name: _____

CHAPTER 4 – ENERGY: SIMPLE MACHINE

VI. What do you mean by Mechanical Advantage of a Lever? What is its unit?

Ans. _____

VII. Answer the following questions based on the figure given below:



(i) Name and define the simple machine that has been used in the above figure.

(ii) Label the parts in the above figure.

(iii) What is the purpose of using this Machine?

(iv) Give examples of some situations where Pulleys are used.



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CHAPTER 4 - ENERGY: SIMPLE MACHINE

VII) Circle the odd one out. Give a reason for your answer.

1. Wedge, Screw, Inclined plane, Rectangular plane

2. Roller skates, Boiling pins, Knife, Skateboard

3. Ramp, Wheelbarrow, Winding road, Wooden planks

4. Bottle openers, Nutcrackers, Key ring, Tongs

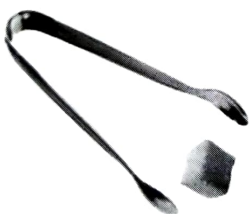
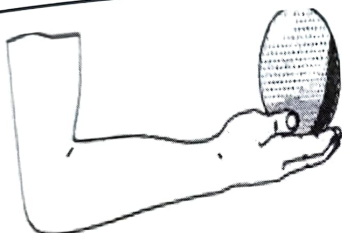
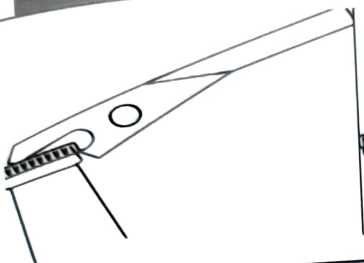
IX) Identify the type of levers in each case by marking the position of the load, effort and fulcrum.



Name: _____

CHAPTER 4 – ENERGY: SIMPLE MACHINE



X. Tick the most appropriate answer.

Ans. i. When you apply a force on a machine, it is called the

- a. efficiency.
- c. fulcrum.

- b. effort.
- d. load.

ii. The point about which a lever rotates is called the

- a. load point.
- c. fulcrum.

- b. effort point.
- d. none of these

CHAPTER 4 – ENERGY: SIMPLE MACHINE

- in. When you drive a car up a hill, the elevated road is an example of
 a. a lever
 b. a wedge
 c. an inclined plane
 d. none of these
- ix. A jack used to lift a car works on the principle of a
 a. lever
 b. screw
 c. pulley
 d. wedge
- x. A machine with a mechanical advantage 2 means that
 a. effort required to lift a load is less than the load.
 b. effort required to lift a load is more than the load.
 c. effort required to lift a load is equal to the load.
 d. effort required to lift a load can be equal, less or more than the load.

XI. Fill in the blanks:

- (i) Human forearm is an example of class _____ lever.
- (ii) In class-1 lever, MA can be either _____ than or _____ than 1.
- (iii) A spiral staircase is an example of a _____.
- (iv) A nail is an example of a _____.
- (v) If M.A. of a lever is 1, the effort you need to apply to lift a load of 50N is _____.

XII. Numerical questions.

- i. A man carries a weight of 500 N by applying a force of 50 N. Calculate the mechanical advantage and identify the type of lever.

- ii. In a class three lever, the distance between the effort and the load is 40 cm and load arm is 1 m long. Find the length of the effort arm and then calculate MA.

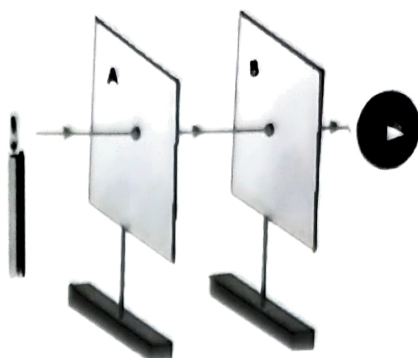
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CHAPTER 5 – LIGHT

I. Answer the following questions based on the diagram given below:

(I) Name the property of light demonstrated in the experimental set-up.

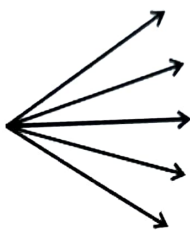


(ii) Will it be possible to see the light ray if one of the boards shown in the figure is moved such that the holes are no longer in a straight line?

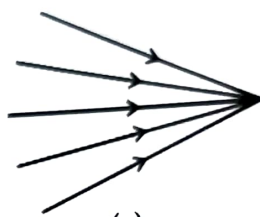
II. Identify the type of beam shown in the figures below giving an example of each.



(a)



(b)



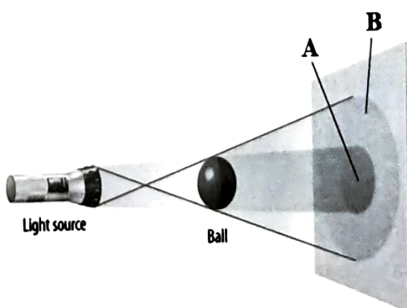
(c)

(a) _____

(b) _____

(c) _____

III. The diagram given below shows the shadow formed by an extended source of light. Label the regions A and B.





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CHAPTER 5 – LIGHT

IV. Identify the type of eclipses. Mark the celestial bodies and the type of shadows formed in both the cases.

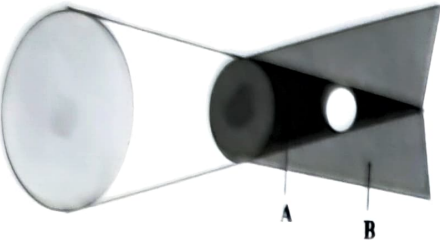


Fig. 1

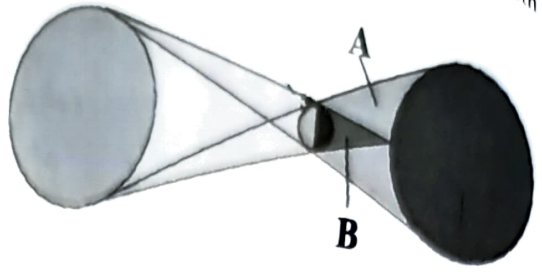


Fig. 2

i. Why do these objects form shadows?

ii. In which region of the Earth's shadow is the moon, when a total lunar eclipse takes place?

V. Select the correct option in each case:

(i) Which of these does not cast a shadow?

- (A) A metal spoon (B) A mountain
(C) An umbrella (D) A plastic sheet

(ii) Which statement explains why an object casts a shadow?

- (A) The object allows light to pass through it.
(B) The object blocks light completely or partially.
(C) The object has colour.
(D) A shadow has no mass and does not occupy space.

(iii) Which of the following is NOT a characteristic of a shadow?

- (A) It is always dark.
(B) It only shows the outline of an object.
(C) Its size varies depending on the distance from the light source.
(D) It shows all the details of the object.

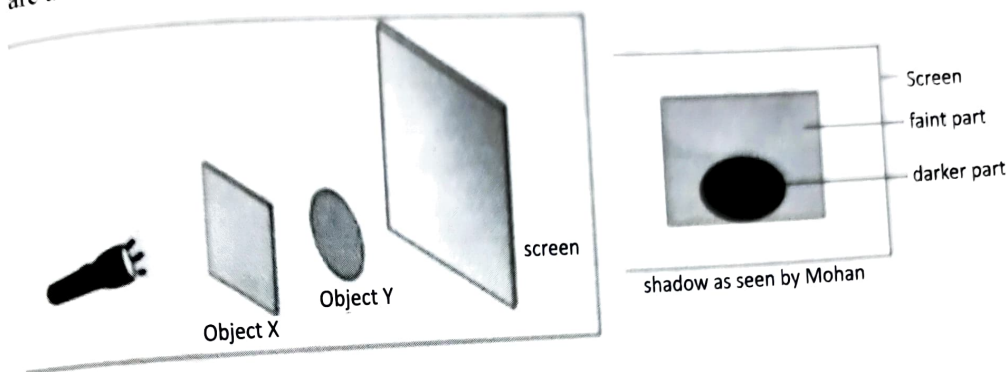


CHAPTER 5 – LIGHT

(iv) Megha placed a stick in the playground at 8:15 a.m. in the morning. How will the shadow of the stick at 12:00 noon be in comparison to the one at 8:15 a.m.?

- (A) It will be shorter than one at 8:15 a.m.
- (B) It will be same as the one at 8:15 a.m.
- (C) It will be longer than one at 8:15 a.m.
- (D) Shadow will not form at 12:00 noon.

(v) Mohan set up the experiment as shown below. The shadows Mohan observed on the screen are as shown below. Which one of the following describes objects X and Y correctly?



- (A) Both objects X and Y were opaque.
- (B) Both objects X and Y were transparent.
- (C) Object X was translucent but object Y was opaque.
- (D) Object X was translucent but object Y was transparent.

VI. Fill in the blanks:

- (i) An _____ is an astronomical event that occurs when one celestial object moves into the shadow of another.
- (ii) An eclipse is the result of _____ propagation of light.
- (iii) A lunar eclipse takes place only on a _____ day.
- (iv) A lunar eclipse takes place at least _____ a year.
- (v) A solar eclipse takes place only on a _____ day.
- (vi) _____ solar eclipse occurs when sun appears as a black disc surrounded by a ring of light.
- (vii) _____ solar eclipse occurs when people on some part of the earth can see a total solar eclipse and some can see an annular solar eclipse.
- (viii) _____ images allow the safe viewing of eclipses.

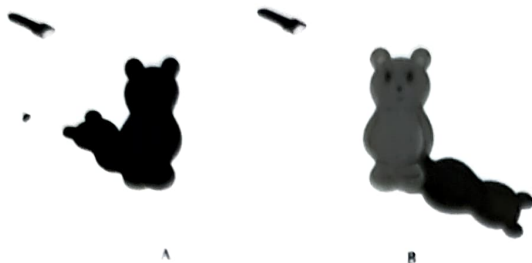


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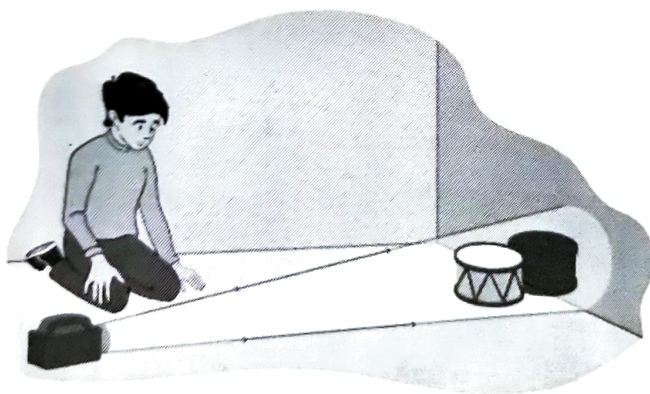
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CHAPTER 5 – LIGHT

- VII. Which of these images correctly shows the shadow formed when the torch shines down on the bear? Give a reason for your answer.



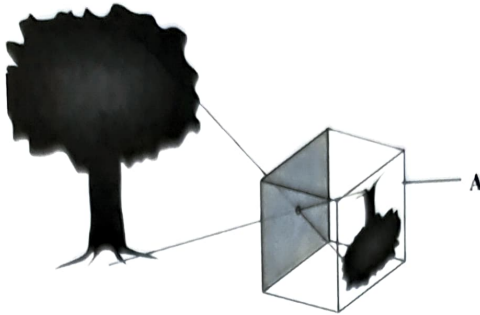
- VIII. Vihaan forms a shadow of the drum on the wall. If he wants to form a larger shadow, what can be done?



Name: _____

CHAPTER 5 – LIGHT

IX.



i. Name the device labelled as A.

ii. State the principle on which it works.

iii. Write two characteristics of the image formed by this device.

CHAPTER 6 – MAGNETISM

1. Fill in the blanks.

- The end of the magnet that points towards the south is called the _____.
- In the single-touch method of magnetisation, the end of the bar magnet where its north pole is first touched becomes _____.
- The soft iron bar placed along the two poles of a horseshoe magnet is called a _____.
- Magnets which retain their magnetism only for short duration are called _____.
- The strength of a magnet is _____ at the poles and _____ at the centre.

2. Match the following:

Column A	Column B
1. Hammering	a. A temporary magnet
2. Magnetic keeper	b. Disrupts the alignment of north and south pole
3. Magnetic field	c. When a magnet material starts behaving like a magnet
4. Magnetic induction	d. Soft iron strip used to store magnet
5. Electromagnet	e. Strongest at the poles, weakens at the middle of the magnet
Column A	
Column B	

3. Classify the following materials as Magnetic and Non - magnetic.
 Key, glass, wood, iron nail, book, rubber, nickel, silver, chalk.

--	--

4. How can you separate a magnetic substance from a mixture?

5. In which direction does a suspended magnet come to rest?



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CHAPTER 6 – MAGNETISM

6. What happens when similar poles of the magnets come close to each other?

7. Define magnetic field.

8. What are temporary magnets?

9. What are the ways by which a magnet can be demagnetized?



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CHAPTER 6 – MAGNETISM

10. Can we isolate north pole or south pole of a magnet? Give reason.

11. In the following cases, write whether there is attraction or repulsion between magnets.



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CHAPTER 6 – MAGNETISM

12



- i. Draw the magnetic field lines around the bar magnet given in the above picture.
- ii. List the properties of magnetic lines of force.

- iii. Why do these lines of force never intersect with each other?

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CHAPTER 1 – INTRODUCTION TO CHEMISTRY

Q1] Fill in the blanks.

- a) _____ helps to increase the production of food.
- b) Food items like jams and pickles are protected using _____.
- c) L.P.G is used for _____.
- d) Melamine and Bakelite are the examples of _____ plastics.
- e) _____ are colourful substances used in the textile industry to impart colour to clothes.
- f) A _____ is a person who does research in the field of chemistry.
- g) The knowledge of _____ helps us to test soil and recommend suitable _____ for better yield of crops.

Q2] Short answers questions.

- a) What is alchemy?

- b) Name **any 2** chemicals that are used in cosmetics.

Q3] Write the contribution of chemistry in the following fields (One only in each).

- a) Industry

- b) Cosmetics

- c) Clothings

- d) National defence



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CHAPTER 1 – INTRODUCTION TO CHEMISTRY

Q4 Give two examples for each of the following substances.

a) Food preservatives

b) Fuels

c) Fungicides

d) Medicines

e) Building materials

Q5] Write TRUE or FALSE against each of the following statements and correct the incorrect statements.

a) Chemistry plays an important role in our national economy.

b) Antibiotics are used as preservatives.

c) D.D.T. is an important fertiliser.

d) Gunpowder is an insecticide.

e) Enzymes secreted by our body are chemicals.

Q6] For each of the following type of medicine, write the purpose it is used for, and give an example for each.

Type of medicine	Purpose	Example
Antibiotics		
Antihistamines		
Antipyretics		
Analgesics		

CHAPTER 2 – ELEMENTS, COMPOUNDS AND MIXTURES

I. Multiple Choice Questions.

i. Which of the following is a mixture?

- a. Oxygen b. Ozone c. Seawater d. Salt

ii. The most abundantly occurring element on the earth is

- a. oxygen b. silicon c. aluminium d. hydrogen

iii. In a compound, elements are always present in a

- a. fixed ratio b. variable ratio c. both 'a' and 'b' d. none of these

iv. Fractional distillation is used to separate

- a. solids from solids b. solids from liquids c. liquids from liquids d. none of these

v. During filtration, the substance left behind on the filter paper is called

- a. residue b. filtrate c. solution d. none of these

II. Name the following:

i. The small particles of matter which cannot be further broken into smaller particles without changing its fundamental properties _____

ii. The term for an element with atomicity 3 _____

iii. The smallest particle of an element _____

iv. A technique used to separate an insoluble solid suspended in a liquid _____

v. The process of changing a solid directly into its gaseous state on heating _____

III. Write true or false for the following statements. Also correct the statement if it is false.

i. Milk is a mixture of cream and water. ()

ii. In a compound, constituents cannot be separated by any physical means. ()



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CHAPTER 2 – ELEMENTS, COMPOUNDS AND MIXTURES

iii. The chemical formula of water is HO_2 . ()

iv. When the components of a mixture are non-uniformly distributed, it is known as a homogeneous mixtures. ()

v. The combining capacity of an atom of an element is called its valency.()

IV. Match the Column 'A' with Column 'B' and write the answers in the table given below.

A		B	
1	Matter	a	A matter in which all molecules are made up of single type of atom.
2	Atom	b	Formed when two or more atoms combine
3	Molecule	c	Can be categorized based on the type of its molecules.
4	Element	d	Is an exception. Exists alone
5	Helium atom	e	Types of elements
6	Metals and Non-metals	f	Cannot exist alone

A						
B						

V. Find the odd one out. Give reason for your answer.

i. condensation, evaporation, sublimation. solidification

ii. gold, silver, sulphur, copper

iii. filtration, evaporation, loading, crystallization



Date: _____

Name: _____ Div.: _____ Roll No.: _____

CHAPTER 2 – ELEMENTS, COMPOUNDS AND MIXTURES

VI. Write the symbol and Latin names of the following.

Element	Symbol	Latin Name
Silver		
Lead		
Gold		
Sodium		
Mercury		
Chlorine		

VII. Define the following.

i. Atomicity:

ii. Homogeneous mixture:

iii. Magnetic separation

VIII. Write the constituent atoms and the chemical formulae of the following:

Compound	Constituent atoms	Chemical Formula
Zinc chloride		
Magnesium sulphide		
Carbon dioxide		
Water		



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CHAPTER 2 – ELEMENTS, COMPOUNDS AND MIXTURES

IX. Differentiate between the following.

i. Compounds and Mixtures (Formation)

Compounds	Mixtures

ii. Metals and Non-metals (Conductors)

Metals	Non-metals

iii. Pure substance and mixtures (Composition)

Pure substance	Mixtures



Name: _____

CHAPTER 2 – ELEMENTS, COMPOUNDS AND MIXTURES

iv. Sedimentation and Decantation (definition)

Sedimentation	Decantation

X. Look at the picture and answer the following question given below.

a) Fig A

i. What is the method of separation shown? _____

ii. When do we use it?

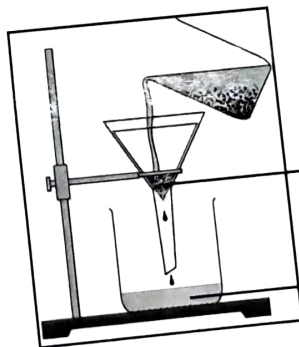


b) Fig 'B'

i. Label the figure.

ii. Identify the separation technique.

iii. What type of mixture can be separated by this method?



CHAPTER 3 – WATER

I. Multiple Choice Questions.

- i. The percentage of water in the human body is _____.
a. 25 % b. 50% c. 70% d. 60%
- ii. Water is a universal solvent because _____.
a. it dissolves many substances b. water is the most common substance on earth
c. we use water every day in our lives d. it is used more for washing
- iii. The main source of surface water is _____.
a. sea water b. river and lake water
c. well water d. None of these
- iv. The boiling point of water is _____.
a. 100°C b. 1100°C c. 1000°C d. 500°C
- v. The process of removal of salt from sea water is called _____.
a. desalination b. water table c. sterilization d. ozonization

II. Name the following

- i. The process of removing germs to make water safe for drinking _____
- ii. Insoluble impurities can be removed through a muslin cloth _____
- iii. Plants lose water in the form of water vapour through the process of _____
- iv. A homogeneous mixture of solvent and solute _____
- v. A process in which water becomes highly rich in nutrients. _____



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CHAPTER 3 – WATER

III. Write true or false for the following statements. Also correct the statement if it is false.

i. Water is an element. ()

ii. Water can be made germ free by freezing it for some time. ()

iii. Chlorine tablets are used for removing suspended impurities. ()

iv. A solute is the substance that dissolves in a solvent. ()

v. Industrial wastes include fertilizers and pesticides that are used in farms to control insects and pests. ()

IV. Match the Column 'A' with the correct options given in Column 'B' and write the answers in the table given below.

A		B	
1	Freezing point of water	a	40°C
2	Eutrophication	b	Waterborne disease
3	Alum	c	Vectors
4	Gastroenteritis	d	An overgrowth of aquatic plants and algae
5	Maximum density of water	e	To kill germs
		f	0°C
A			
B			

V. Find the odd one out. Give reason for your answer.

i. sea, river, lake, pond, well, stream

ii. oil, alcohol, carbon-disulphide, petrol

iii. jaundice, typhoid, cholera, malaria, dysentery

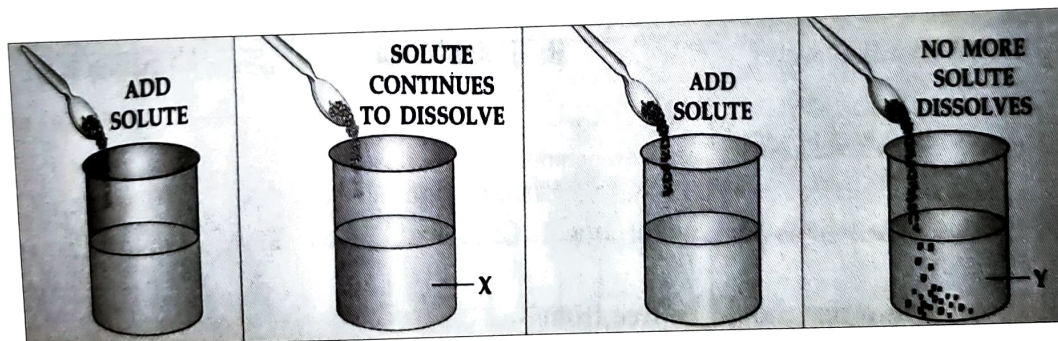
iv. Human waste, waste from factories, detergents, chlorine, untreated sewage

**CHAPTER 3 – WATER****VI. Give reason for the following:**

i. Water is a compound.

ii. Water is called a universal solvent.

iii. Water helps to maintain and regulate body temperature.

VI. The diagram below represents the formation of a saturated and an unsaturated solution.**Answer the following questions - pertaining to the above formation.**

Select the correct answer- from the choice in bracket.

1) 'X' is a /an _____ (saturated solution/unsaturated solution)

2) 'Y' is a/an _____ (saturated solution/unsaturated solution)

3) A solution which cannot dissolve more of the _____ (solute/solvent) at a given _____ (time/temperature) is called a saturated solution.

4) A saturated solution can be converted to an unsaturated solution by _____ (heating/cooling) the solution.



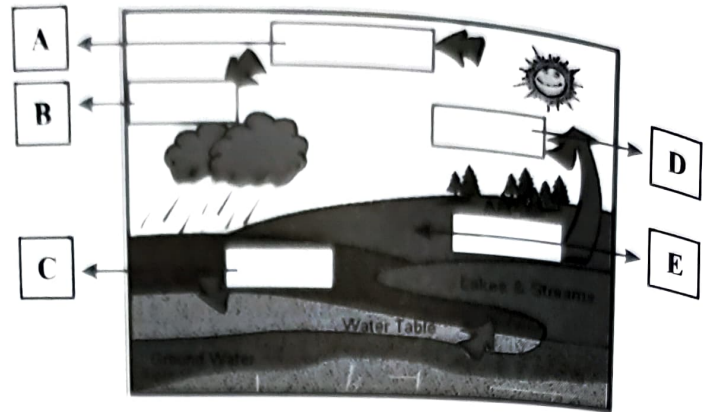
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CHAPTER 3 – WATER

VII. Label the water cycle and answer the question given below.

A _____
B _____
C _____
D _____
E _____



i. What happens to the water which comes down as rain?

ii. Explain water table.

iii. In Water cycle what happens during evaporation?

iv. Describe the condensation process?



CHAPTER 4 – AIR AND ATMOSPHERE

I. Choose the correct options from the following:

- i. The gas whose percentage is maximum in air is
 - a. Oxygen
 - b. Nitrogen
 - c. Carbon dioxide
 - d. Water vapour
 - ii. Air is a _____.
 - a. mixture
 - b. compound
 - c. element
 - d. non-metal
 - iii. Nitrogen is necessary for _____.
 - a. photosynthesis
 - b. respiration
 - c. growth of plants
 - d. burning
 - iv. Air pollution is largely due to _____.
 - a. animal activity
 - b. human activity
 - c. plants
 - d. None of these
 - v. Some new car engines made to avoid air pollution use
 - a. diesel
 - b. unleaded petrol
 - c. kerosene
 - d. None of these
- II. Name the following
- i. This gas supports combustion _____
 - ii. The coldest layer of the atmosphere _____
 - iii. Substances that give off useful energy (heat and light) when burnt in air _____
 - iv. An inert gas used to make semiconductors _____
 - v. This gas is used to make weather _____



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CHAPTER 4 – AIR AND ATMOSPHERE

III. Match the column 'A' with the Column 'B' and write the answers in the table given below.

A		B	
1	Releasing harmful substances into the air	a	Volcanic eruption
2	Natural phenomenon	b	Air pollution
3	Inhaled air	c	Greenhouse effect
4	Global warming	d	The air we breathe in
5	Nitrogen	e	78%
6	Exosphere	f	The air we breathe out
		g	no air in this region
		h	21%

A					
B					

IV. Complete the analogy.

- Oxygen : respiration ; carbon dioxide: : _____
- Stratosphere : jet planes ; Thermosphere : : _____
- Hydrogen : burns in air; _____ : : supports burning
- Hydrogen : rocket fuel ; LPG: : _____
- Tree plantation : more oxygen ; Deforestation: : _____

VI. Define the following:

- Respiration :



Name: _____

CHAPTER 4 – AIR AND ATMOSPHERE

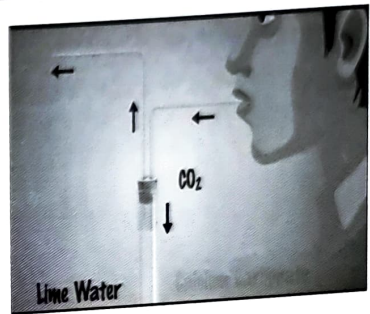
ii. Combustion:

iii. Air pollution :

VI. Look at the picture and answer the following questions.

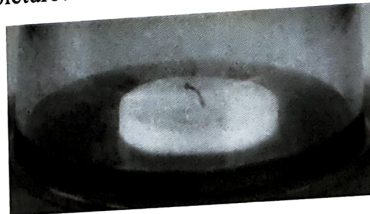
A. The figure adjacent represents an experiment to show the presence of a component of air.
Answer the questions that follow the diagram.

i. What do you observe after completion of the experiment?



ii. What conclusion do you draw from the above observation?

B. i. What do you observe in the below picture?





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CHAPTER 4 – AIR AND ATMOSPHERE

ii. This experiment shows the presence of _____ in the air. Justify your answer.

VI. Give reason for the following:

i. CNG is a preferred fuel for running automobiles.

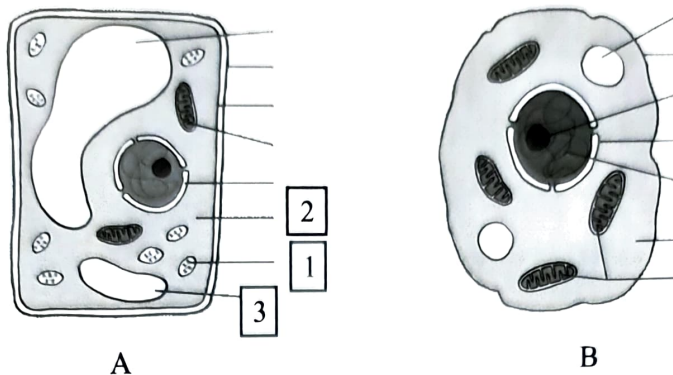
ii. Mountaineers carry oxygen cylinder while climbing mountains.

iii. Air contains water.



CHAPTER 3 – CELL: THE BASIC UNIT OF LIFE

1. Observe the diagram given below and answer the questions that follows.



A

B

i) Identify the plant cell and an animal cell from the above pictures.

ii) Label parts 1 and 2.

iii) What would happen to the cell in picture A, if they did not have the part labelled '1'?

iv) Chloroplasts are only found in plant cells. Give reason.

v) Name and state the importance of part labelled 3 in picture A.

vi) Why is cell called the structural and functional unit of a living organism?



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CHAPTER 3 – CELL: THE BASIC UNIT OF LIFE

II. Fill in the blanks:

1. A _____ is an instrument used to see tiny objects that are not visible to the naked eye.
2. _____ is known as the father of microbiology.
3. The size of a cell is usually measured in _____.
4. Depending on the number, organisms may be _____ or _____.
5. The cell wall is non-living and is composed of _____.

III. Complete the following paragraph.

The _____ is usually spherical in shape and controls all activities of the cell and hence is called the brain of the cell. It is surrounded by a double layered membrane called the _____. This membrane contains many pores called _____. This membrane surrounds the jelly-like fluid called the _____ which contains one or more spherical bodies called _____. It also contains a network of thread-like structures called _____ which contains hereditary units called _____ that are passed on from the parent to the offspring. During cell division, these fibres thicken to form structures called _____.

IV. Name the plastid likely to be found in the cells of:

	Name of the plastid
i. petals of sunflower	
ii. ripe tomato	
iii. skin of green mango	
iv. cells of potato	

V. Differentiate between cytoplasm and protoplasm.

Cytoplasm	Protoplasm



Name: _____

CHAPTER 3 – CELL: THE BASIC UNIT OF LIFE

VI. State the exact location and function of the following.

	Location	Function
Chromoplasts		
Chromatin fibres		



Name: _____ Div.: _____ Roll No.: _____

CHAPTER 4 – HUMAN BODY: THE DIGESTIVE SYSTEM

Q1] Fill in the blanks with the correct answers.

- 1) _____ is the process which involves the removal of undigested food from the body. (Assimilation/Egestion)
- 2) The largest digestive gland of human digestive system is the _____. (Liver / Pancreas)
- 3) The water present in the digested food is absorbed by _____ intestine. (large / Small)
- 4) Liver secretes _____ into small intestine. (pancreatic juice/bile)
- 5) Burning sensation in the stomach is caused due to _____ of food. (indigestion / digestion)

Q2] Name the following:

i) Three digestive glands

ii) Parts of Large intestine

iii) Parts of Small intestine

iv) The organ responsible for temporary storage of bile

Q3] Define the following:

a. Bolus

b. Peristalsis.



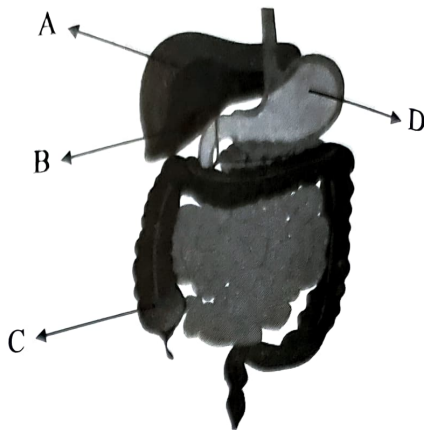
Name: _____

CHAPTER 4 – HUMAN BODY: THE DIGESTIVE SYSTEM

Q4] Look at given picture and answer the following questions.

a. Label the parts A, B, C and D.

b. Write the function of B, C and D.



Q5] Match the following and write your answer in the table given below.

Column A	Column B
1. Amylase	a. Gastric juice
2. Lipase	b. Starch
3. Stomach	c. Fats
4. Small intestine	d. Egestion
5. Anus	e. Protein
6. Pepsin	f. Villi

Column A						
Column B						

Q6] Choose the odd one out and give a valid scientific reason for your answer.

a. Salivary glands, Stomach, Liver, Pancreas.

b. Pharynx, Large intestine, Ingestion, Small intestine.



Date: _____

Name: _____ Div.: _____ Roll No.: _____

CHAPTER 4 – HUMAN BODY: THE DIGESTIVE SYSTEM

Q7] Put the following process in their correct sequence during digestion.

Tongue pushes the food, peristalsis, grinding and mixing saliva, cutting and tearing of food.

1. _____
2. _____
3. _____
4. _____
5. _____

Q8] Differentiate between the following:

a. Bile and Hydrochloric acid (Function)

Bile	Hydrochloric acid

b. Colon and caecum (Location)

Colon	Caecum

Q9] Give reasons for the following.

a. Digestion starts in the mouth.

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CHAPTER 4 – HUMAN BODY: THE DIGESTIVE SYSTEM

b. Walls of the stomach release gastric juices containing hydrochloric acid.

c. The inner walls of the small intestine are folded into villi.

Q10] Complete the table with the correct answers.

Organ of production	Name of the enzyme	Site of release	Chemical reaction
.....	.....	Mouth	.....
.....	Pepsin	Stomach	.....
Pancreas	.....	.....	Starch → Maltose + other sugar
.....	.....	Duodenum	Proteins → Peptides
.....	Lipase	Duodenum	.....
Ileum	Maltose	.....	.....
.....	Sucrose	Ileum	Sucrose → Glucose + Fructose
.....	.....	ileum	.....



CHAPTER 5 – HUMAN BODY: THE RESPIRATORY SYSTEM

Q1] Fill in the blanks:

- 1) The site of gaseous exchange in lungs is _____.
- 2) The front opening of the wind pipe is guarded by _____.
- 3) The trachea divides into two _____.
- 4) The two steps of breathing are _____ and _____.
- 5) The _____ separates the chest cavity from the abdominal cavity.

Q2] Choose the correct option from the following:

- 1) What word best describes the function of the trachea?
 - a. pumping station
 - b. entrance point
 - c. muscle
 - d. passageway
- 2) Which tube connects the nose with the bronchus?
 - a. epiglottis
 - b. trachea
 - c. oesophagus
 - d. appendix
- 3) What is the bubble-shaped sacs in the lungs where gas exchange take place?
 - a. capillaries
 - b. bronchial tubes
 - c. alveoli
 - d. throat
- 4) When a human inhale, the air pressure in the chest cavity
 - a. remains the same, allowing both pressures to be equal.
 - b. increases, allowing the lungs to expand.
 - c. decreases, allowing outside air to flow into the lungs.
 - d. does not change, as there is no air pressure in the cavity.



Date: _____

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CHAPTER 5 – HUMAN BODY: THE RESPIRATORY SYSTEM

5) Where does the transfer of oxygen into the blood stream takes place?

- a. heart
- b. trachea
- c. alveoli
- d. nasal passages

Q3] Differentiate between the following:

1. Breathing and respiration (Definition)

Breathing	Respiration

2. Aerobic respiration and anaerobic respiration (Definition)

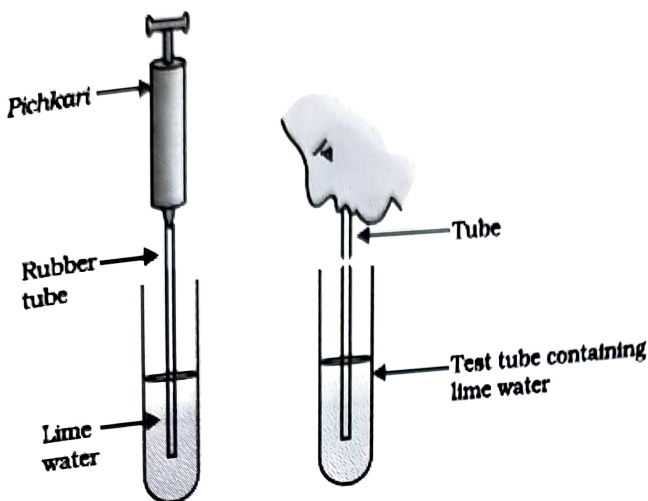
Aerobic respiration	Anaerobic respiration

Name: _____

CHAPTER 5 – HUMAN BODY: THE RESPIRATORY SYSTEM

Q4] Look at given picture and answer the following questions.

1)



a. What is the colour of freshly prepared lime water?

b. After blowing air, do you observe any colour change? Why?

Q5] Short answer questions:

a. How are the lungs protected from injury?

b. How are the oxygen and carbon dioxide exchanged in the lungs?



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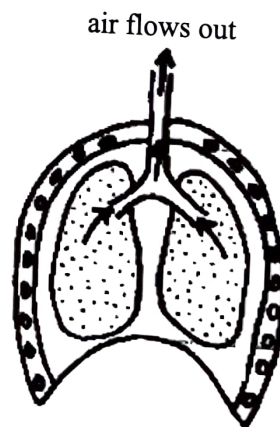
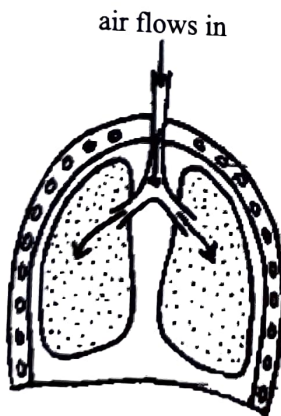
CHAPTER 5 – HUMAN BODY: THE RESPIRATORY SYSTEM

c. Arrange the following organs in the correct order to show the path taken by fresh air at the time of inhalation.

trachea, nose, bronchioles, bronchi, larynx, alveoli, pharynx, lungs

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Q6] Observe the picture given below and answer the following questions



a. Label the process 'A' and 'B'

A. _____ B. _____

b. How the muscles of the ribcage help during the process A?

c. Does the diaphragm move up or down during the process B? Why?



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CHAPTER 6 – HUMAN BODY: THE CIRCULATORY SYSTEM**Q1] Fill in the blanks:**

- 1) _____ acts as a pump in the circulatory system.
- 2) _____ is a thin-walled blood vessel that carries blood from various organs to the heart.
- 3) _____ gives the red colour to the blood.
- 4) The upper two chambers of heart are called _____ and _____.
- 5) A person with blood group _____ is a universal recipient.

Q2] Choose the correct option from the following.

- 1) Which of these carries oxygenated blood?
 - a) Superior Vena Cava
 - b) Pulmonary Vein
 - c) Inferior Vena Cava
 - d) Pulmonary Artery
- 2) Which of these is not the part of the circulatory system?
 - a) Blood
 - b) Blood vessels
 - c) Lungs
 - d) Heart
- 3) Haemoglobin is a:
 - a) Bile pigment
 - b) Green pigment
 - c) Respiratory pigment
 - d) Enzyme
- 4) The _____ divides the heart into two parts.
 - a) Septum
 - b) Aorta
 - c) Atrium
 - D) Valve



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CHAPTER 6 – HUMAN BODY: THE CIRCULATORY SYSTEM

5) The only artery that carries deoxygenated blood.

- a) Renal artery
- b) Aorta
- c) Pulmonary artery
- d) Hepatic artery

Q3] Differentiate between the following.

a) Blood and Blood Vessels (Function)

Blood	Blood vessels

b) RBCs and WBCs (Function)

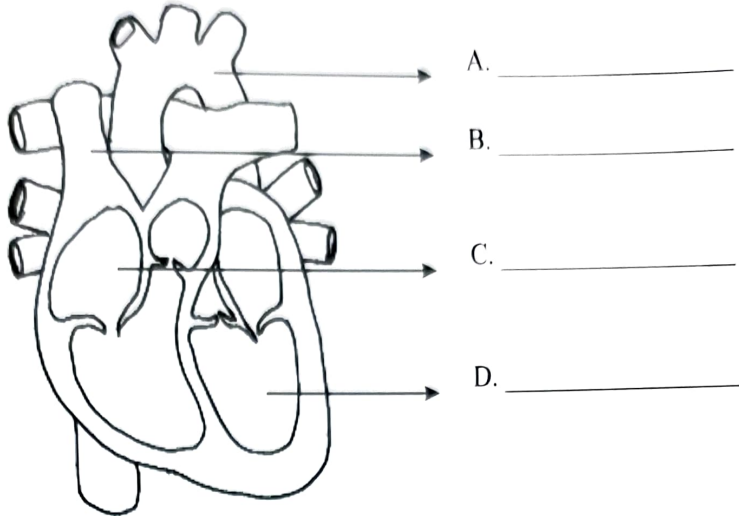
RBC (Red blood cells)	WBC (White blood cells)



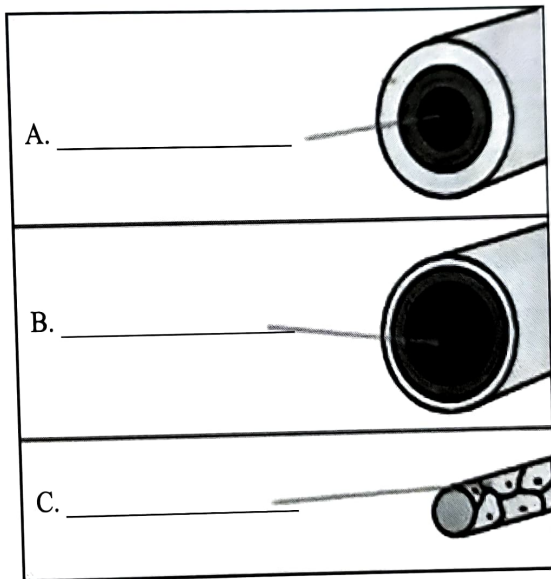
CHAPTER 6 – HUMAN BODY: THE CIRCULATORY SYSTEM

Q4] Look at given picture and label the parts.

1)



Q5] The diagrams given below are the cross-section of the blood vessels.



a. Identify the blood vessels A, B and C.

b. Name the type of blood that flows through A.

c. Mention one structural difference between A and B.



Name: _____

CHAPTER 6 – HUMAN BODY: THE CIRCULATORY SYSTEM

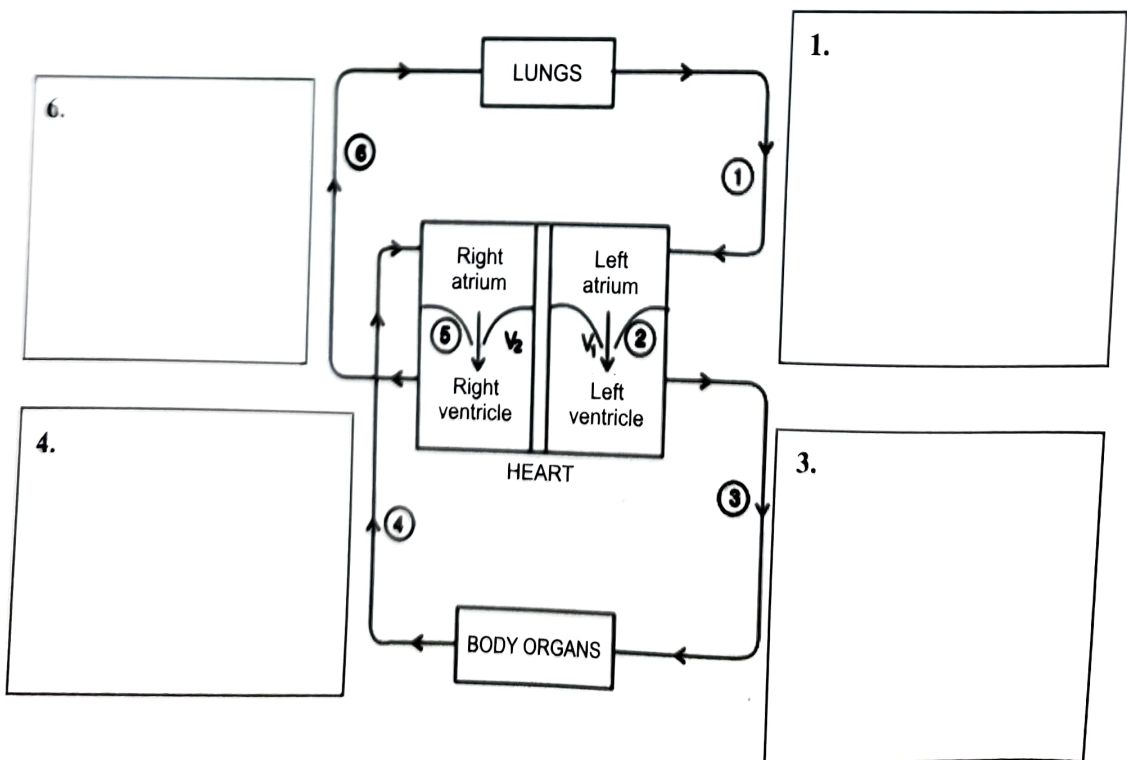
d. In which of the above blood vessels does exchange of gases actually takes place.

Q6] Match the following and write your answer in the table given below.

Column A	Column B
1. Erythrocytes	i. Universal donor
2. Leukocytes	ii. Platelets
3. Thrombocytes	iii. Red blood cells
4. Atrium	iv. Heart chamber
5. Blood Group O	v. White Blood Cells

Column A					
Column B					

Q7] Complete the following diagram with the correct blood vessel and the type of blood it carries.





CHAPTER 7 – HEALTH AND HYGIENE

Q1] Choose the correct option from the following.

- 1) Which of the diseases is contagious?
 - a) Allergy
 - b) Cancer
 - c) Mumps
 - d) Diabetes
- 2) Which of these diseases is caused by a virus?
 - a) Typhoid
 - b) Chickenpox
 - c) Polio
 - d) Malaria
- 3) How is cholera transmitted from person to person?
 - a) Through droplets in the air.
 - b) Through contaminated food or water
 - c) Through deep cuts in the skin
 - d) Through direct contact
- 4) Which of these is a symptom of malaria?
 - a) Diarrhoea
 - b) Swelling in the legs
 - c) Vomiting
 - d) Abdominal pain

Q2] Identify the disease based on their symptoms (All symptoms are not mentioned for some).

- 1) Persistent cough, low fever, severe weight loss

___ B ___ C ___ L ___

- 2) Fever, body ache

___ N ___ L U ___ A

- 3) Fear of water (Hydrophobia)

___ B ___ E ___

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CHAPTER 7 – HEALTH AND HYGIENE

4) Swollen lymph nodes, blood clots all over the blood

___ A G ___ E

5) Paralysis at limbs

P ___ L ___

Q3] Classify the following under the categories mentioned below.

a) Communicable and non-communicable diseases:

Tuberculosis, Cancer, Yellow fever, Allergies

Communicable	Non-communicable

b) Bacterial and viral diseases:

Plague, Dengue, yellow fever, tuberculosis, rabies, cholera, common cold, typhoid

Bacterial diseases	Viral diseases

Q4] Observe the picture and answer the questions mentioned below.

a. Name the insect.



CHAPTER 7 – HEALTH AND HYGIENE

b. It is a vector not a germ. Give reasons.

c. Name any two diseases spread by the bite of the insect.

Q5] Complete the following table for the below mentioned diseases.

Diseases	Mode of transmission	Body parts affected	Symptoms
Common cold		Nasal cavity	
	Bite of female Aedes mosquito		Fever, headache, chills backpain, loss of appetite, nausea, vomiting
Chicken pox	Droplet infection, direct contact		
Tuberculosis			Chest pain, prolonged cough releasing blood.
		Lungs, blood-stream, tonsils	Swollen lymph nodes, blood clots all over the body
Diphtheria		Trachea	
	Contaminated food and water		Frequent diarrhoea and vomiting of clear liquid, dehydration.
	Direct contact		Severe allergic itching



Date: _____

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CHAPTER 7 – HEALTH AND HYGIENE

Q6] Give one term for the following.

1) Diseases that do not spread from infected person are called.

2) Diseases which spread from infected person to healthy person

3) Practices which help to maintain health and prevent spread of diseases.

4) Carriers which are used to infect other organisms.



CHAPTER 8 – HABITATS AND ADAPTATIONS

I. Choose the correct options:

1. Some grasses grow in hot dry areas. Why might they grow deep roots?

- A. to protect the plant from sun damage
- B. to take in as much light as possible
- C. to spread seeds to new places
- D. to reach water down below

2. How do adaptation help animals?

- A. to hide from predators
- B. to hunt for food
- C. to survive in their habitats
- D. All of these

3. Which plant grows in a desert and can store water in its stems?

- A. Cactus
- B. Kelp
- C. Grass
- D. Water lily

4. The adaptations in fish includes

- A. fins
- B. streamlined body
- C. both A and B
- D. gills

5. Dolphins and Whales are included in

- A. fish
- B. amphibians
- C. reptiles
- D. mammals

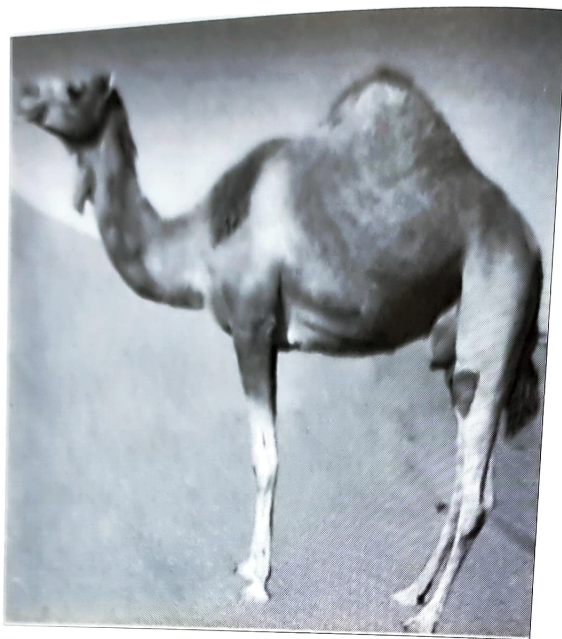


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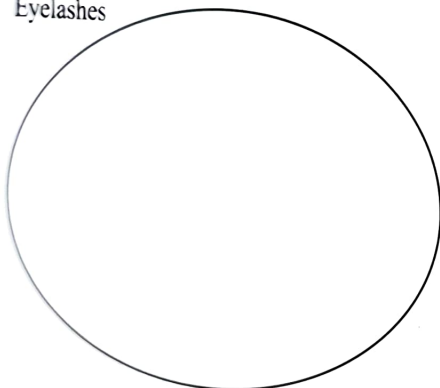
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CHAPTER 8 – HABITATS AND ADAPTATIONS

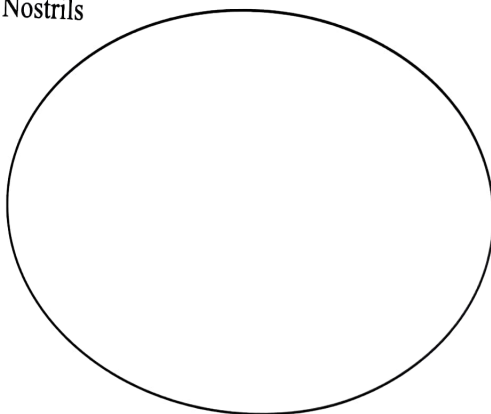
II. How does the different body parts of a camel helps it to adapt to survive in a desert habitat?



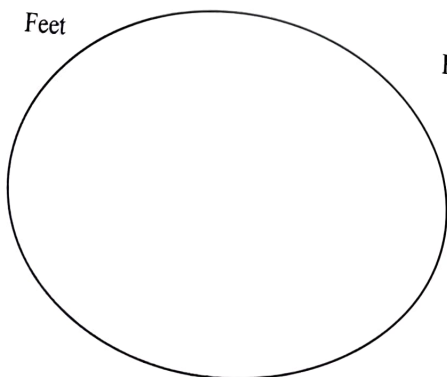
Eyelashes



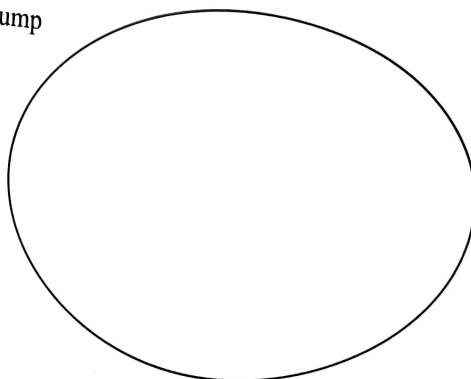
Nostrils



Feet



Hump





CHAPTER 8 – HABITATS AND ADAPTATIONS

III) Give reasons

i. The leaves of under water plants are thin and narrow

ii. The mountain goats have white shiny fur.

iii. Birds have strong shoulder bone and modified breastbones

IV) Observe the pictures given below and answer the questions that follows.



A



B



Name: _____

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CHAPTER 8 – HABITATS AND ADAPTATIONS

i) Identify picture A and B.

ii) Name the habitat in which they live.

iii) Give any two adaptive features for each with reference to their habitat.

iv) Give two more examples of the organisms of the above mentioned habitat.

V) Name the following:

i) Two aquatic animals which do not have gills.

ii) Thick layer of fat underneath the skin.

iii) A defense mechanism seen in animals to protect themselves from the predators.



Date: _____

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CHAPTER 8 – HABITATS AND ADAPTATIONS

- iv) A kind of behavior seen in herbivorous animals to protect themselves from predators by moving in big groups.

- v) A type of body in fishes where the head and tail regions are tapering and the middle part is broad.



ज्ञानात् सर्वं प्रदीप्यते।

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