PRACTICE WORKSHEETS

with

SRIJAN

ICSE

Physics

Class 8

SRIJAN

CONTENTS

Chapter 1: Matter

Worksheet 1

1. Fill in the blanks.

(i) Every matter is made up of tiny particles called _____.

(ii) _____ can be compressed only a little.

(iii) As a liquid is heated, the kinetic energy of molecules goes on _____.

(iv) The fixed temperature at which freezing of a liquid takes place at standard atmospheric pressure is called its _____.

(v) Water boils at _____°C.

2. Encircle the odd one out.

(i) Book, duster, pencil and water.

(ii) Oxygen, hydrogen, nitrogen and oil.

(iii) Water, oil, alcohol and chair.

(iv) Evaporation, volume, surface area and humidity.

(v) Boiling, evaporation, solid and sublimation.

3. Answer the following questions.

(i) Define molecules.

(ii) What happens to motion of molecules with increase in temperature?

(iii) Which state of matter cannot be compressed easily?

(iv) Name the process in which a substance in vapour state on cooling changes into liquid state.

(v) What is meant by evaporation?

4. Define the following:

(i) Atom

(ii) Solid

(iii) Liquid

(iv) Gas

(v) Melting

Chapter 1: Matter

Worksheet 2

1. Fill in the blanks.

(i) The rate of evaporation _____ if the surface area of the liquid increases.

(ii) The intermolecular forces of _____ are very strong.

(iii) _____ can be compressed easily.

(iv) Water freezes into ice at _____.

(v) _____ is the reverse process of sublimation.

2. Write T for true and F for false statement.

(i) The process of changing of liquid state into vapour state at fixed temperature is called boiling.

(ii) A gas can flow easily.

(iii) The molecules in solids are less tightly packed.

(iv) The space between the molecules of a substance is called intermolecular space.

(v) The intermolecular force of attraction amongst molecules of two different substances is called the force of cohesion.

3. Give one word for the following:

(i) This state of matter can be stored in a container.

(ii) This state of matter has almost zero intermolecular force.

(iii) This is the process of changing of a liquid into a solid at a fixed temperature.

(iv) The process of transformation of solid on heating directly into gas without passing through the intermediate liquid.

(v) Solids which undergo sublimation.

4. Answer the following questions.

(i) Define molecule.

(ii) Which state of matter has extremely small intermolecular space?

(iii) What happens to kinetic energy of molecules when a solid is heated?

(iv) What is meant by freezing?

(v) Why should we wear cotton clothes in summer?

Chapter 2: Physical Quantities and Measurement

Worksheet 1

1. Write the type of motion in following cases.

(i) The mass of an object contained per unit volume is called density.

(ii) Relative density is a unitless quantity.

(iii) The density of ice is more than the density of water.

(iv) A hydrometer works on the principle of floatation.

(v) The SI unit of density is g/cm^3.

2. Fill in the blanks.

(i) The mass of the given solid can be measured by using _____.

(ii) The _____ is defined as the ratio of the density of the substance to the density of pure water at 4°C.

(iii) _____ is used to measure the purity of milk.

(iv) The solid will sink in a liquid if relative density of the solid is _____ than relative density of the liquid.

(v) Density of the substance = Relative density × _____ kg/m^3.

3. Match the columns.

Column A	Column B
(i) Temperature increases	(a) Huge ices floating on water
(ii) Density bottle	(b) On increasing density
(iii) Icebergs	(c) On decreasing density
(iv) Temperature decreases	(d) Check the density of acid solution
(v) Hydrometer	(e) Density of a liquid

4. Answer the following questions.

(i) What is called the ratio of mass and volume?

(ii) Which is a pure number and has no units?

(iii) Why does an iron nail sink in water?

(iv) Which can increase or decrease its effective density as compared to the density of sea water?

(v) Why does the balloon float or rise up in air?

Chapter 2: Physical Quantities and Measurement

Worksheet 2

1. Tick the correct answer.

(i) Which of the following has the lowest density?

(a) ice (b) mercury (c) iron (d) water

(ii) The density of water changes with change in

(a) mass (b) temperature (c) force (d) weight

(iii) The relative density of copper is

(a) 8.9 (b) 2.7 (c) 19.3 (d) 1.3

(iv) What part of an iceberg is seen above the surface of water?

(a) about $\frac{1}{5}$ (b) about $\frac{1}{10}$ (c) about $\frac{3}{10}$ (d) about $\frac{9}{10}$

(v) Which gas is filled in balloon?

(a) hydrogen (b) nitrogen (c) helium (d) (a) and (c)

2. Write T for true and F for false statement.

(i) 1 g/mL is equal to 1000 kg/m^3.

(ii) The volume of the given liquid can be measured using measuring can.

(iii) An ice cube dropped in a cold drink sinks in it.

(iv) Density of iron is much less than the density of water.

3. Name the following.

(i) A metal having density 7800 kg/m^3.

(ii) Physical quantity which is inversely proportional to volume.

(iii) Principle on which a hydrometer works.

4. Answer the following questions.

(i) Why does mercury not stick to the surface of a glass vessel?

(ii) Why does a ship made of iron not sink in water?

(iii) Write the principle of floatation.

(iv) What is the SI unit of mass?

Chapter 3: Force and Pressure

Worksheet 1

1. Tick the correct answer.

(i) Thrust per unit area is called

(a) pressure (b) surface area (c) force (d) mass

(ii) The SI unit of moment of a force

(a) newton (b) dyne (c) newton metre (d) metre

(iii) Pressure is directly proportional to

(a) thrust (b) force (c) both (a) and (b) (d) none

(iv) The pressure exerted on the object increases when surface area

(a) increases (b) decreases

(c) either increases or decreases (d) none

(v) Which one of the following is correct expression for pressure exerted by a liquid column?

(a) $P = hdg$ (b) $P = hg$ (c) $P = hd$ (d) $P = mgh$

2. Write T for true and F for false statement.

(i) A force may change the speed of an object.

(ii) Liquids and gases exert pressure in all directions.

(iii) The SI unit of pressure is N m.

(iv) Foundations of high-rise buildings are kept wide so as to reduce pressure on the ground.

3. Answer the following questions.

(i) Define force.

(ii) Which is equal to the product of force and perpendicular distance?

(iii) When is the force said to be an anticlockwise moment?

(iv) Why do we prefer to use a wrench/spanner with a long arm?

(v) Calculate the force which exerts a pressure of 70 Pa on an area of 7 m^2.

Chapter 3: Force and Pressure

Worksheet 2

1. Write T for true and F for false statement.

(i) Atmospheric pressure is maximum at sea level.

(ii) The pressure is more if thrust acts on smaller surface area.

(iii) The pressure of atmospheric air all around us is called atmospheric pressure.

(iv) Pressure is directly proportional to the surface area of the object in contact.

(v) A see-saw works on the principle of turning moment of a force.

2. Fill in the blanks.

(i) When you apply force on the handle of a door, the door turns around _____.

(ii) Greater the magnitude applied on the object, _____ is the turning effect of the object.

(iii) The SI unit of thrust is _____.

(iv) School bags have broad straps so as to _____ pressure on the shoulder.

3. Give one word for the following.

(i) A device used to measure atmospheric pressure

(ii) This increases with a decrease in altitude

(iii) This helps us to suck cold drink through a straw.

(iv) Thrust acting per unit area

(v) This is commonly known as the moment of the force

4. Answer the following questions.

(i) What is the SI unit of force?

(ii) What happens when a driver applies force on the steering wheel of his car?

(iii) Why can a camel walk easily on a sandy surface?

(iv) What is meant by lateral pressure?

(v) Why does an astronaut wear a special spacesuit?

Chapter 4: Energy

Worksheet 1

1. Write T for true and F for false statement.

(i) Work is said to be done when a force acting on an object changes its position.

(ii) The SI unit of work is joule.

(iii) Heavier the object, lesser the kinetic energy possessed by it.

(iv) The energy stored in an object at rest due to its position is called its potential energy.

2. Fill in the blanks.

(i) The rate of doing work is called _____.

(ii) _____ the capability of doing work.

(iii) 1 horsepower = _____watts.

(iv) Water stored in a dam has _____ potential energy.

3. Name the following.

(i) This is the product of force and displacement.

(ii) This is the SI unit of energy.

(iii) Ocean tides possess a huge amount of this energy.

(iv) This kind of mechanical energy is always positive.

4. Answer the following questions.

(i) When is power said to be 1 watt?

(ii) Convert 1 gigawatt into megawatt.

(iii) What is conservation law of mechanical energy?

(iv) How is kinetic energy produced?

(v) Mention two examples of kinetic energy.

Chapter 4: Energy

Worksheet 2

1. Tick the correct answer.

(i) 1 kilojoule is equal to

(a) 10^3 J (b) 10^4 J (c) 10^5 J (d) 10^6 J

(ii) The kinetic energy of an object depends on its

(a) mass (b) speed

(c) both (a) and (b) (d) none

(iii) Heat energy is also called

(a) nuclear energy (b) thermal energy

(c) chemical energy (d) electrical energy

(iv) Which is the ratio of work and time?

(a) power (b) energy (c) force (d) pressure

2. Write T for true and F for false statement.

(i) A coolie standing at a place with a heavy load on his head does no work.

(ii) A mountaineer climbing up a mountain does work.

(iii) Kinetic energy does not depend on volume.

(iv) The energy possessed by an object in motion is called kinetic energy.

(v) Gravitational potential energy can either be positive or negative.

3. Answer the following questions.

(i) When is work said to be done?

(ii) When a girl is swinging on a swing, then does she work?

(iii) A force of 50 N displaces an object through a distance of 10 m in its own direction. Calculate the work done on the object.

(iv) Define kinetic energy with one example.

(v) What is the SI unit of power?

Chapter 5: Light Energy

Worksheet 1

1. Write T for true and F for false statement.

(i) Passage of light from one transparent medium to another is called refraction of light.

(ii) The speed of light is 3×10^8 m/s in vacuum or air.

(iii) The ray of light travelling in first medium and falling on the surface separating the two media is called incident ray.

(iv) The centre of the sphere of which the spherical mirror forms a part is called centre of curvature.

(v) The angle between the normal and the incident ray is called the angle of emergence.

2. Fill in the blanks.

(i) _____ mirrors are used as rear-view mirrors.

(ii) _____ image can be obtained on a screen.

(iii) _____ of light occurs because sunlight is a mixture of seven colours.

(iv) The geometric centre of a spherical mirror is called its _____.

3. Match the columns.

Column A	**Column B**
(i) Real image	(a) Used as make-up mirror
(ii) Virtual image	(b) Used in street light as reflector
(iii) Concave mirror	(c) Inverted
(iv) Convex mirror	(d) Erect

4. Answer the following questions.

(i) What do you mean by refraction of light?

(ii) What is the speed of light in glass?

(iii) What is meant by radius of curvature?

(iv) Establish the relationship between focal length and radius of curvature.

Chapter 5: Light energy

Worksheet 2

1. Write T for true and F for false statement.

(i) A medium in which light travels slower is called optically denser medium.

(ii) The refractive index is a unitless quantity.

(iii) The second law of refraction is also called Snell's law.

(iv) Virtual image is formed when light rays from an object, after reflection, actually meet at one point.

(v) Convex mirrors are used in solar cookers.

2. Fill in the blanks.

(i) _____ mirrors are used as reflectors in torches.

(ii) The image formed is real and _____ when the object is placed at infinity.

(iii) The band of seven colours is called _____.

(iv) Rainbow is caused due to _____ of light by tiny raindrops present in the air.

(v) The inner surface of the convex mirror is _____ and outer surface behaves as the _____ surface.

3. Define the following.

(i) Spherical mirror (ii) Normal

(iii) Angle of incidence (iv) Angle of prism

(v) Dispersion of light

4. Answer the following questions.

(i) Define concave mirror.

(ii) What is called the ratio of the speed of light in vacuum to the speed of light in the given medium?

(iii) What does VIBGYOR indicate?

(iv) Write the laws of refraction.

(v) Write the nature of the image when the object is placed at the focus.

Chapter 6: Heat Transfer

Worksheet 1

1. Write T for true and F for false statement.

(i) Evaporation occurs at all temperatures.

(ii) The boiling process is a rapid process.

(iii) Ether expands more than alcohol on heating.

(iv) Liquids expand less than solids on heating.

(v) When the length of solid rod increases on heating, the thermal expansion is called area expansion.

2. Fill in the blanks.

(i) _____ process takes place at a fixed temperature.

(ii) Gases expand _____ than solids and liquids on heating.

(iii) The SI unit of coefficient of superficial expansion is _____.

(iv) Water on heating expands _____ than alcohol.

(v) The value of coefficient of linear expansion of a solid depends on its _____.

3. Solve the following numerical problems.

(i) Find the increase in length of an aluminium cable of length 40 m when the temperature rises from 15°C to 45°C. The coefficient of linear expansion of aluminium is 2.4×10^{-5}/°C.

(ii) If the coefficient of linear expansion of steel is 2.2×10^{-5}/°C, then find the value of its coefficient of superficial expansion and coefficient of volume expansion.

4. Answer the following questions.

(i) Name the fixed temperature at which a liquid boils to form a gas.

(ii) Define coefficient of linear expansion of a solid.

(iii) Establish the relationship between coefficient of volume expansion and coefficient of linear expansion.

(iv) Name the three factors on which the thermal expansion of a liquid depends.

(v) Why are connections of telephones and electric wires in summer kept loose?

Chapter 6: Heat Transfer

Worksheet 2

1. Tick the correct answer.

(i) Which form of energy gives sensation of warmth and cold?

(a) heat (b) electric (c) light (d) none

(ii) Heat energy always flows from

(a) higher to lower temperature (b) remains constant

(c) lower to higher temperature (d) none

(iii) The amount of area expansion depends on the

(a) original area (b) rise in temperature

(c) nature of the solid material (d) all of these

(iv) When solid gets heated, the vibrational kinetic energy of molecules

(a) increases (b) decreases

(c) remains constant (d) none

(v) How many kinds of thermal expansion in solids does have?

(a) two (b) three (c) four (d) five

2. Match the columns.

Column A	Column B
(i) Solids	(a) Molecules are very loosely packed
(ii) Liquids	(b) Molecules are tightly packed
(iii) Gases	(c) Leads to cooling of the surroundings
(iv) Evaporation	(d) Temperature remains unchanged
(v) Boiling	(e) Molecules are loosely packed

3. Answer the following questions.

(i) What happens to an object when it cools?

(ii) Is evaporation a surface phenomenon only?

(iii) Name the kinds of thermal expansion in solids.

(iv) Why are the car tyres filled with less air during summer?

(v) Why does a thick-walled glass tumbler crack when hot milk is poured in it?

Chapter 7: Sound

Worksheet 1

1. Write T for true and F for false statement.

(i) Sound is a form of energy which causes sensation of hearing in our ears.

(ii) The SI unit of time period is second(s).

(iii) A sound of low pitch is hoarse.

(iv) A sound of a single frequency is monotone.

(v) Veena is an example of wind instrument.

2. Fill in the blanks.

(i) The sound of a buzzing bee has _____ pitch.

(ii) Only a _____ can produce a monotone.

(iii) A sound produced by a musical instrument is called a _____ sound.

(iv) A sound of high pitch is called _____ sound.

(v) For sound, the unit of amplitude is same as the unit of _____.

3. Answer the following questions.

(i) What is called the distance between two consecutive compressions or two consecutive rarefactions?

(ii) What is the speed of sound in air at 15°C?

(iii) What happens to the frequency of a sound when its pitch goes on increasing?

(iv) Establish the relationship between wave speed, frequency and wavelength.

(v) Name two wind instruments.

4. Solve the following numerical problems.

(i) If frequency of a sound is 400 Hz, find the time period of vibration of a medium particle.

(ii) Frequency of a tuning fork is 528 Hz. If the speed of sound in air is 344 m/s, then calculate the wavelength of the sound wave.

Chapter 7: Sound

Worksheet 2

1. Fill in the blanks.

(i) Sound needs a medium for its _____.

(ii) The SI unit of frequency is _____.

(iii) Frequency of a wave is _____ of its time period.

(iv) Pitch of a sound depends on its _____ of vibration.

(v) Guitar is an example of _____ instrument.

2. Match the columns.

	Column A		Column B
(i)	String instrument	(a)	Bongo
(ii)	Wind instrument	(b)	m/s
(iii)	Membrane instrument	(c)	decibel
(iv)	The unit of loudness of sound	(d)	Clarinet
(v)	The SI unit of wave speed	(e)	Veena

3. Define the following.

(i) Wave speed

(ii) Pitch

(iii) Loudness

(iv) Amplitude

(v) Time period

4. Answer the following questions.

(i) How is sound produced in humans?

(ii) Which has higher pitch, a grown-up man or a child?

(iii) Are sound waves called longitudinal waves?

(iv) Why the sound produced is very weak when you whisper?

(v) Name two membrane instruments.

Chapter 8: Electricity

Worksheet 1

1. Write T for true and F for false statement.

(i) Object can be charged when charges are static and not in motion.

(ii) The rate of flow of electric charge in an electric circuit is called electric current.

(iii) 1 kilowatt is equal to 1000 watts.

(iv) The SI unit of potential difference is volt.

(v) Electric power is equal to product of electrical energy consumed and time.

2. Fill in the blanks.

(i) The SI unit of electric current is _____.

(ii) 1 _____ is also called 1 unit of electricity.

(iii) _____ is the sure test of electrification.

(iv) Like charges _____ each other.

(v) When two bodies are charged by rubbing, _____ and _____ charges develop on them.

3. Define the following.

(i) Electrostatics

(ii) Potential difference

(iii) Electric power

(iv) Fuse

(v) Switch

4. Answer the following questions.

(i) What is meant by resistance?

(ii) What is the SI unit of electrical energy?

(iii) What is called an alternative arrangement for fuse?

(iv) What does electric meter measure?

(v) If the power rating of an CFL is 22 W when operated at 220 V, find the maximum value of safe current flowing through it.

Chapter 8: Electricity

Worksheet 2

1. Write T for true and F for false statement.

(i) Live wire is maintained at 0 V.

(ii) Positive charge flows from lower potential to higher potential.

(iii) Aluminium is a good conductor of electricity.

(iv) Live wire is also known as phase wire.

(v) Electric bulb is an example resistor.

2. Fill in the blanks.

(i) An uncharged conductor can be charged by _____.

(ii) A switch is always connected along with _____ wire.

(iii) Higher the current rating of the circuit, _____ the fuse wire is.

(iv) The _____ wire provides the return path of electric current from our house to mains supply.

(v) A safety device used in an electric circuit that avoids the risk of a heavy shock to the user is called _____.

3. Match the columns.

Column A	**Column B**
(i) Live wire	(a) Green
(ii) Neutral wire	(b) ohm
(iii) Earth wire	(c) watt
(iv) SI unit of electric power	(d) Red
(v) SI unit of resistance	(e) Black

4. Answer the following questions.

(i) How is fuse wire made up of?

(ii) Which is also known as kilowatt-hour meter?

(iii) Calculate the value of 1 W h in joule.

(iv) What is power rating of an electrical appliance?

(v) What happens when glass rod is rubbed with silk fibre?

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