

ICSE Board
Class VIII Physics
Sample Paper – 2 Solution

Question 1

1. (c) Conductors

Electric charges can flow through conductors. Insulators do not allow charges to flow through them.

2. (b) North south direction

A freely suspended magnet would come to rest in the north south direction.

3. (d) Condensation

The change of state from vapour to liquid at a constant temperature is called condensation.

4. (b) Convex lens

Convex lens is used as a magnifying glass.

5. (b) Milky way galaxy

Our solar system belongs to the Milky way galaxy.

6. (a) Sinks

If the weight of a body is more than the weight of fluid displaced by it, then the body sinks.

7. (b) Kinetic energy

Air in motion possesses kinetic energy.

8. (b) Repulsion

When a positively charged body is brought near another positively charged body, it will show repulsion.

9. (a) At the poles of the Earth

The Earth's magnetic field is maximum at the poles of the Earth.

10. (d) Vacuum

Speed of light is maximum in vacuum.

11. (b) During the night

Land breeze blows during the night.

12.(d)Real

An image which can be taken on a screen is called real image.

13.(c) Manometer

Liquid pressure is measured by a manometer.

14.(b) Vertically upward

The direction of buoyant force is always vertically upwards.

15.(a) Surface tension

Small insects like water striders can walk on water due to surface tension.

Question 2

(A)

	Column A		Column B
1	1 Calorie	1	4.2 Joules
2	Concave lens	2	Myopia
3	Silver	3	Conductor
4	Water in a dam	4	Hydroelectric energy
5	Relative density	5	No unit

(B)

1. The space around a magnet where its influence can be felt is called magnetic field.
2. Lightning conductor protects buildings from the damage caused by lightning.
3. Water is used as a coolant in thermal power stations.
4. A ray of light passing through optical centre of a lens passes undeviated.
5. The force of attraction between molecules of the same substance is called cohesion.

Question 3**(A)**

1. False. Jupiter is the largest planet of the solar system
2. False. In an electric motor, electrical energy is converted into mechanical energy.
3. True.
4. False. Convex lenses are always tapering at the edges and thicker at their middle.
5. True.

(B)

1. Molecules of gases are very far apart and there is a lot of empty space between them. So a gas can be easily compressed.
2. Dispersion of light occurs when it passes through a prism because different colours are refracted through different angles.
3. Kilometre is not a convenient unit to measure distances in the universe because heavenly bodies are very far from each other.
4. A piece of tile or stone is a good emitter in comparison to wood.
5. Electrons are negatively charged and protons are positively charged. For an atom the number of electrons is equal to the number of protons and therefore it is neutral.

Question 4**(A)**

1.
 - (a) Refraction of light – When light travels from one transparent medium to another transparent medium, it bends from its original path. This phenomenon of bending of light is called refraction.
 - (b) Angle of refraction - The angle formed between the refracted ray and the normal is called the angle of refraction.
 - (c) Angle of incidence - The angle formed between the incident ray and the normal is called the angle of incidence.
2. Surface tension: It is the property of a liquid by virtue of which its free surface behaves like a stretched membrane with a tendency to contract and acquire minimum surface area.
Examples:
 - i. Soaps and detergents help in cleaning clothes as they lower the surface tension of water. This water readily soaks in the pores of clothes and cleans them efficiently.
 - ii. Small insects like the water strider can walk on water as its weight is not enough to penetrate the surface tension of water.

(B)

1. An electroscope is a device with the help of which one can detect whether a body is charged or uncharged and identify the charge on it.

The two kinds of electroscopes are: 1) Pith ball electroscope, 2) Gold leaf electroscope.

2.



Unlike poles of two magnet facing each other

The properties of magnetic field lines are as follows.

- i. Magnetic field lines originate from the North Pole and terminate at the South Pole.
- ii. Magnetic field lines never intersect each other.

Question 5

(A)

1. Energy sources which can be regenerated or those which provide energy continuously without getting exhausted are called renewable sources of energy. Example: Solar energy.
Energy sources which will get depleted someday are called non-renewable sources of energy. Example: Fossil fuels
2. Heat is a form of energy which brings the sensation of hotness or coldness of a body in us. The amount of heat gained or lost by a body depends on:
 - Mass of the substance
 - Rise or fall in temperature of the substance
 - Nature of the substance

(B)

1. Matter and its constituent particles have the following characteristics:
 - Matter is made up of tiny particles known as **atoms** which consist of three particles called **protons, electrons** and **neutrons**.
 - Protons carry a positive charge (+), electrons carry a negative charge (-) and neutrons carry no charge, i.e. it is electrically neutral. The charges on protons and electrons are equal and opposite.
 - The central part of the atom which consists of protons and neutrons is called **nucleus**. Electrons revolve around the nucleus in circular paths called **orbits** or **shells**.

- Electrons present in the outermost orbit are called **valence electrons** which can be easily removed or transferred from an atom. Hence, they are also called free electrons.
 - Bodies are charged due to the transfer of electrons.
 - The number of protons in an atom is equal to the number of electrons and the total positive charge in it is equal to the total negative charge which shows that an atom is electrically neutral.
2. The uses of a convex lens are:
- It is used in optical instruments like camera, projector, telescope, microscope, etc.
 - It is used as a reading lens and as a magnifying glass.
 - It is used in spectacles for correction of long sightedness of eyes.

Question 6

(A)

1.

(a)

Planets	Satellites
Planets revolve around the Sun	Satellites revolve around the planets
It has a bigger size	It has a smaller size
There are 9 known planets in our solar system out of which 8 are classical planets and Pluto is a dwarf planet.	There are 91 natural satellites known so far in solar system.

(b)

Stars	Planets
Stars have their own light	Planets do not have their own light
They twinkle	They do not twinkle
They are huge in size	They are very small in size
Example: Sun	Example: Earth, Jupiter

2. Two consequences of high latent heat of steam are:
- Steam is used for running trains or machines because the high amount of heat contained in it can be efficiently turned into mechanical energy.
 - Water from the soil does not evaporate quickly by the heat of the Sun as it has high specific latent heat of vaporisation. Thus, the plants are protected from wilting (becoming loose and flaccid).

(B)

1. The factors on which buoyant force depends are:
 - i. Volume of the object immersed.
 - ii. Density of the fluidBuoyant force on an object = weight of the liquid displaced by the object

2.
 - (a) Conduction is the process of heat transmission in which heat energy is transferred from one atom to another, in the direction of lower temperature, without actual movement of atoms from their mean positions.
 - (b) Principle axis is a line passing through the optical centre of the lens and perpendicular to both the faces of the lens.
 - (c) Valence electrons: The electrons present in the outermost orbit of an atom are known as valence electrons.

Question 7**(A)**

1.
 - (a) A momentary deflection in the galvanometer to one side is seen. This indicates the presence of electric current.
 - (b) Momentary deflection in the galvanometer to the opposite direction showing the presence of current in the reverse direction.
 - (c) Phenomenon involved is electromagnetic induction. It is the property by which a changing magnetic field within a closed conducting coil induces electric current in the coil.

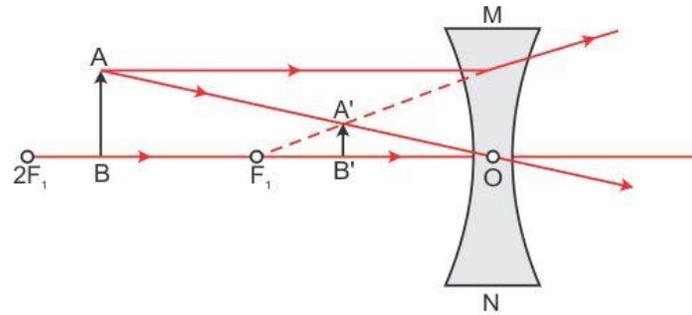
2. The characteristics of liquid pressure are:
 - i. Liquid pressure increases with depth.
 - ii. Liquid pressure remains the same in all directions at a given depth.
 - iii. Liquid pressure depends upon the density of the liquid.
 - iv. Liquids exert pressure on the sides of the container they are stored in.
 - v. A liquid seeks its own level.

(B)

1. A group of stars forming a particular patten in the sky is called constellation. Orion, Ursa Major and Scorpio are examples of three constellations.

2.

(a) Concave lens is used to get a virtual and diminished image of an object.



(b) Convex lens is used to get a real and diminished image of an object.

