1st Term Worksheet

Subject – Physics

Class – VIII

Name : **Sec. :**

Chapter – 2
[Measurement]

Check Point:

[A] Answer the following questions: [28]

1. Explain the method to find density of an irregular object using:

(a) a eureka can

(b) a measuring cylinder

Ans.

[B] Answer the following questions: [31]

1. What is the Principle of Floatation?

Ans.

2. Why ships float on seawater while a nail of iron sinks?

Ans.

3. An iceberg floats in seawater. Explain, why?

Ans. _____

4. Why are the densities of solids, liquids and gases different?

Ans. _____

5. How does density decide whether an object will float or sink?

Ans. _____

[C] Answer the following questions: [32]

1. Explain the change in densities of solids, liquids and gases with the change in temperature.

Ans. _____

2. Explain how ocean currents are caused.

Ans. _____

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3. Explain how convection currents occur in atmosphere.

Ans. _____

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Keywords: **[32]**

Density: _____

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Buoyancy: _____

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Exercise: **[33-35]**

[A] Multiple Choice Questions: [33-34]

(i) Sinking and floating depends on

(a) amount of water displaced by an object (b) density of an object

(c) density of water (d) all of the above

(ii) To calculate the volume of an irregular object we need to

(a) add initial volume and final volume

(b) subtract initial volume from final volume

(c) subtract final volume from initial volume (d) none of the above

(iii) We can measure density of irregular solids using

(a) Eureka can (b) measuring cylinder

(c) both a and b (d) none

(iv) When gold is heated, its density _____.

(a) increases (b) decreases

(c) no change (d) none

(v) Density helps to understand

(a) the motion of materials (b) the motion of gases in atmosphere

(c) floating or sinking of an object in the water (d) none of the above

(vi) _____ is not a porous material.

(a) Wood block (b) Sponge

(c) Styrofoam (d) Lead

(vii) _____ does not change when cooled.

(a) solid (b) liquid

(c) gas (d) none of the above

(viii) Hot air rises up due to _____.

(a) high density (b) low volume

(c) low density (d) high volume

(ix) The particles of a gas move randomly in all directions with a _____.

(a) low speed (b) high speed

(b) remain stable (d) none of the above

(x) Dense air moves towards the earth due to _____.

(a) convection current (b) wind in the atmosphere

(c) ocean current (d) both a and b

[B] Fill in the blanks: [34]

1. The physical property that differentiates one substance from another is called _____.
2. In case of liquid and gases denser object will _____.
3. The proximity of atoms of an object decides the change in its _____.
4. When a _____ is heated, its density becomes less until it changes into a gas.
5. When a liquid is cooled, the molecules become denser until it _____.
6. _____ materials are usually heavy or hard.
7. _____ cause the less dense material to rise up to the surface and denser material to settle down.
8. The difference in _____ is caused by solar energy and convection currents.
9. The density of block wood is less than that of _____.
10. The water displaced out of eureka can is equivalent to the _____ of the object.

[C] Write T for true and F for false statements: [34]

1. The object that is less dense, will float on water. _____
2. Liquid are denser than solids. _____
3. Atoms in liquid are tightly packed. _____
4. When gas is heated its density increases. _____
5. If we take two cubes of the same size but of different materials and weigh them, they will weigh same. _____
6. In eureka can water displaced by stone comes out from a spout. _____
7. We cannot measure the volume of irregular solids. _____
8. Sea water is denser than normal water. _____
9. There should be spillage when you immerse an irregular object in a graduated cylinder. _____

10. If an object is small in size, the surface tension of the water would stop it from sinking. _____

[D] Match the items in column I with the correct choices in column II: [35]

	Column I		**Column II**
1.	Measuring cylinder	a.	density
2.	Dense material	b.	kg / cubic meter
3.	Porous material	c.	Free to move randomly
4.	Atoms in gas	d.	A cylindrical laboratory instrument with marking
5.	Ocean current	e.	Styrofoam
6.	Unit of density	f.	Diamond
7.	Denser water	g.	Caused by difference in temperature
8.	Mass/volume	h.	Saline
9.	Displacement of water is more by object	i.	Tightly packed
10.	Atoms in solid	j.	Increases force acting on it

[E] Answer the following questions: [35]

1. Explain how to measure the volume of a stone using eureka can and measuring cylinder.

Ans- _____

2. Explain the relation between the density and three states of matter i.e. solid, liquid and gas.

Ans- _____

3. Write a short note on:

(i) Ocean current (b) Convection current

Ans- _____

4. How heavy objects are able to float in water?

Ans-

5. On what factors floating or sinking of an object depend?

Ans-

Chapter – 3
[Force and Pressure]

Check Point:

[A] Answer the following questions: [39]

1. Explain the mechanism of a crane.

Ans.

2. Explain the mechanism of a hammer.

Ans.

3. A cock stands at the end of a see-saw, 5m away from the pivot. If the weight of the cock is 10N, find the moment.

Ans.

4. A dog of weight 30N stands on one end of a see-saw and the distance between the dog and the pivot is 4m, find the moment.

Ans.

[B] Answer the following questions: [40]

1. Calculate the pressure when a force of 200N is exerted on an area of:

(a) 10 m^2 (b) 5 m^2

Ans.

2. What forces acting on an area of 0.5 m^2 will produce pressure of 500 Pa?

Ans. _____

3. A force of 30N is applied on an area of 2 m^2. Compute the pressure is being applied on the area.

Ans. _____

4. The pressure of a gas contained in a cylinder with a movable piston is 300 Pa. The area of the piston is 0.5 m^2. Calculate the force that is exerted on the piston.

Ans. _____

[C] Answer the following questions: [41]

1. Explain pressure and its applications.

Ans. _____

2. Why do dams have a broad base?

Ans. _____

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[D] Answer the following questions: [43]

1. Describe pressure exerted by liquids and its applications.

Ans. _____

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Keywords: **[46]**

Moment: _____

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Moment of force: _____

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Balancing moments: _____

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Pressure: _____

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Atmosphere: _____

Atmospheric pressure: _____

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Barometer: _____

Exercise: **[47-49]**

[A] Multiple Choice Questions: [47-48]

(i) Moment of force is affected by _____

(a) magnitude of force (b) perpendicular distance to the force

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

(ii) Which of the following is not correct for pressure in liquid?

(a) Liquid exerts pressure in all directions

(b) Pressure decreases with depth

(c) Flow from higher level to lower level

(d) Pressure increases with the increase in density

(iii) When the force is acting vertically downwards or normal to the surface it is called

(a) pressure (b) thrust

(c) area (d) force

(iv) Pressure in liquid depends on _____

(a) depth of the liquid (b) density of the liquid

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

(v) Greater the force, greater will be the

(a) area (b) thrust

(c) pressure (d) perpendicular distance

(vi) To measure the effect of force applied on a body, we need to take into account _____.

(a) magnitude of force (b) area of force

(c) weight of an object (d) both (a) and (b)

(vii) _____ take the shape of the container.

(a) solid (b) liquid

(c) gas (d) none of the above

(viii) The device used for measuring atmospheric pressure is called a _____

(a) thermometer (b) clinometer

(c) barometer (d) hydrometer

(ix) _____ does not exert pressure in all directions.

(a) solid (b) liquid

(c) gas (d) plasma

(x) With the increase in altitude, air pressure will _____.

(a) increase (b) decrease

(c) does not change (d) none

[B] Fill in the blanks: [34]

1. The product of the force and the perpendicular distance to the line of action of the force from the axis of rotation is known as the _____ around the axis.
2. A _____ is used to swing up and down by pushing the ground alternately with the feet.
3. _____ is directly proportional to the force acting on the surface.
4. The gaseous envelope surroundings the _____ is called atmosphere.
5. The weight of air is related to the number of _____ present over the surface of an object to which it applies pressure.
6. The atmosphere extends up to nearly _____ above the surface of the earth.
7. The pressure inside our bodies get balanced by the _____ pressure.
8. An object can by rotated or turned from a given point by applying a _____ on it.
9. Evangelista Torricelli was a student of _____.

[C] Write T for true and F for false statements: [23]

1. The sea-saw will imbalance when total clockwise moment is equal to total anticlockwise moment. _____

2. In see-saw, the person sitting on the right side applies a force downward which causes a clockwise moment. _____
3. In a see-saw, the person sitting on the left side applies a force downward which causes an anticlockwise moment. _____
4. The standard unit of force is called Pascal. _____
5. The pressure exerted by liquids and gases shows dissimilarities. _____
6. The pressure of a liquid at the same point will be the different. _____
7. If the area increases, pressure increases. _____
8. Gas exerts pressure in all directions. _____
9. Humans do not experience pressure. _____
10. Deep sea divers have to wear specially designed suits otherwise the huge pressure of water will crush their bodies. _____

[D] Match the items in column I with the correct choices in column II: [49]

	Column I		**Column II**
1.	Unit of moment of the force	a.	A fixed point
2.	Crane	b.	Acts at a longer perpendicular distance
3.	Jib	c.	Newton per square meter
4.	Unit of pressure	d.	Use to break things
5.	Fluids	e.	Used to move heavy object
6.	Pivot	f.	Horizontal arm to lift heavy object
7.	Evangelista Torricelli	g.	Newton-meter
8.	Effort force	h.	Equal to the moment of load
9.	Moment of effort	i.	Constructed simplest barometer
10.	Hammer	j.	Gases and liquids

[E] Answer the following questions: [49]

1. Explain the turning effect of force and state the factors affecting it.

Ans- _____

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2. Explain balancing effect of force with an example of sea-saw.

Ans- _____

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3. What happens if we drill two holes at different height in a plastic bottle filled with water?

Ans-

4. If we turn a glass filled with water and covered with an index card upside down. Why doesn't the card fall down?

Ans-

5. State few characteristics of pressure exerted by liquid.

Ans-

6. Write a note on atmospheric pressure.

Ans-

[F] Solve the following numerical problems: [49]

1. Calculate the force needed to speed up a scooter with a rate of ms^{-2}, if the mass of the car is 560 kg.

Ans-

2. If the mass of a cycle is 60 kg, what force will be required to speed up the cycle at a rate of 2 ms^{-2}?

Ans-

3. To accelerate a vehicle to a rate of 4 m/s^2, 80N force is required. Find the mass of vehicle.

Ans-

4. The area of a book cover is 0.025 m^2 and the pressure exerted by the air is 5000 pascals. What force will be exert on the book when it is placed on a desk?

Ans-