KALPAVRUKSHA MODEL SCHOOL

Answers of Online class Assignments-3

Class: VIII **Sub: Physics** **Date: 4.9.2021**

Topic: PRESSURE

I .Answers:

1. **How does liquid pressure vary with depth?**

   ANS: As we go deeper beneath the surface of a liquid, the pressure increases. Pressure increases with depth. Deep under the sea the pressure exerted by water is much greater than at the sea level.

2. **Why are dams made stronger and thicker at the bottom than at the top?**

   ANS: Dams are made stronger and thicker at the bottom than the top to withstand the high pressure at greater depths.

3. **Explain why balloons burst when too much air is blown into it?**

   ANS: The balloon inflates due to the pressure of the air inside it. If you fill too much air in the balloon, the balloon bursts because the pressure on the walls of the balloon increases beyond which its walls can withstand. Air also has weight and hence exerts pressure in both upward and downward direction.

4. **How would you show that liquids exert pressure in all directions?**

   ANS: Take an empty metallic can. Pour some water in the can and heat it (without cap) until water begins to boil. When the water starts boiling, the steam is formed. It pushes out air from the can. When the steam starts coming out continuously from the mouth of the can, stop heating and immediately put the cap back. Remove the can form the burner and pour cold water on the can. You will notice that they can get crushed from all sides. It is because on pouring cold water, steam inside the can immediately changes into water, leaving a partial vacuum inside the can. As a result of the excess atmospheric pressure outside, the can crushes it inwards. This shows that air exerts huge pressure in all directions.

5. **Where is the pressure due to water higher in the sea – near the base or at the top?**

   ANS: in Sea, near base or at top. Pressure tends to decrease with altitude and increase with depth. So pressure due to water in sea in higher at base.

6. **How does pressure at a point within a liquid change with its depth?**

   ANS: The pressure in a liquid is different at different depths. Pressure increases as the depth increases. The pressure in a liquid is due to the weight of the column of water above. The greater pressure at the bottom would give a greater 'force per unit area' on the wall.

7. **Can liquids exert pressure upward? Give one example.**

ANS: If you try to push an inflated balloon into a bucket of water you will find that as you try to push down the balloon the water seems to be pushing it back upward. In fact if you stop pushing the balloon, the balloon will be pushed back to the surface. This is because the water in the bucket exerts pressure on the balloon.

8. **Explain why, water comes out more slowly from an upstairs tap than from a similar tap downstairs?**

ANS: It is because of the pressure exerted by water. As the depth of water increases, the pressure also increases. The distance between the tank and the upstairs tap is lesser than the distance between the tank and the downstairs tap so water comes out with more force in the downstairs tap than from the upstairs one.

9. **Ratna says that water exerts pressure on the bottom of the bucket but Meena says that water exerts pressure on the sides of the bucket. What is your opinion about it?**

ANS: Pressure is exerted by water equally on all sides of the container as the force is applied equally on all sides rather in one particular direction.

II.CHOOSE THE CORRECT ANSWERS:

1. A mustard oil is kept in a beaker. It will exert pressure _____.

a) Downward only b) sideways only c) upwards only d) in all directions

ANS: d) in all directions

2. Pressure exerted by a liquid _____with depth.

a) Increases b) decreases c) can't say d) both a and b

ANS: a) increases

3. If the upward force exceeds the weight of the object then_____.

a) Object sinks b) object floats c) none of these d) both a and b

ANS: b) object floats

4. Dams are made stronger and thicker at the bottom than top to withstand the _____ at greater depths.

a)low pressure b)high pressure c)no pressure d)none of these

ANS: b) high pressure