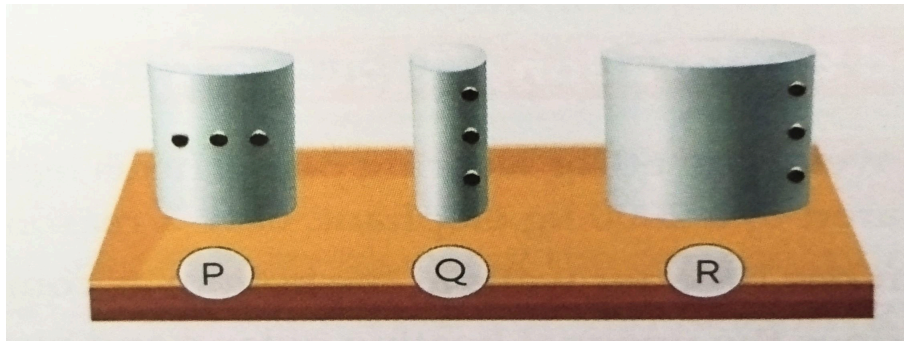


Satish Chandra Memorial School
Class VIII
Science HOTS Question
FM- 16

1. Three tins filled with water have holes of the same size and are kept on the same horizontal surface as shown. **Choose all the correct option(s) that apply**



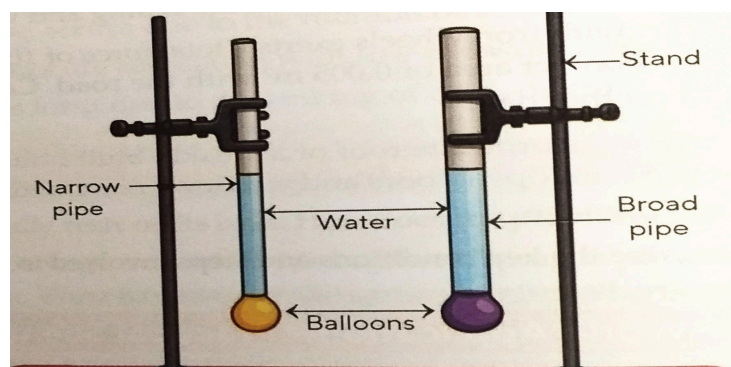
(a) The stream of water falls out the slowest through the
(1)

- a. Middle hole in the container P
- b. Topmost hole in the container Q
- c. Bottommost hole in the container R
- d. Topmost hole in the container R

(b) The stream of water through the holes in container P falls out equally at the same rate This implies that (1)

- a. Liquid exerts pressure on the walls of the container.
- b. Liquid pressure depends on the height of the liquid column.
- c. Liquid pressure at the same depth will be the same.
- d. Liquid pressure decreases as the area on which it acts increases.

2. Observe the given experimental setup as shown



in the image and answer the following questions.

a. Why do the balloons bulge to the same extent in the given setup even though the pipes have different diameters? (1)

b. What will happen to the balloon's bulge if more water is added to the narrow pipe? Explain why. (1)

3. A group of students is comparing how different objects press into wet clay when the same force of 60 N is applied to each. Analyse the data carefully and answer the following questions.

Object	Type of Object	Area of Contact (m^2)
A	Wooden block	0.04
B	Metal cube	0.02
C	Shoe heel	0.005
D	Iron nail tip	0.0005

a. Which object will sink the deepest into the clay? Explain your answer based on the data. (1)

b. Calculate the pressure applied by Object B on the clay. (1)

4. Explain why some objects float and sink in water, using the concept of density and buoyant force. (2)

5. We apply a force to throw a ball towards the sky, while it comes back to the ground on its own. Name the two forces associated with the movement of the ball? How are both the forces different? (2)

6. a. How does ink spread in water? (1)

b. Will the nature of spreading ink in water be the same as in Glycerin? Justify your answer with proper explanation. (1)

7. Observe the image carefully and answer the following questions.

a. What process is shown in the picture? $\frac{1}{2}$

b. Why is this process considered important? (1)

c. Name any one disease that can be prevented by this method. (1)



8. a) Assertion (A) Non-communicable diseases have become more common in India.

Reason (R) Rapid urbanisation, unhealthy eating habits, lack of physical activity and increased stress levels have led to a rise in lifestyle-related illnesses.

b) Assertion (A) Proper handwashing significantly aids in preventing the spread of communicable diseases.

Reason (R) Pathogens responsible for communicable diseases can be directly transferred through physical contact.