



PHYSICS

NCERT - NCERT PHYSICS(BENGALI ENGLISH)

FLOATING BODIES

Example

1. What is the effective density of the mixture of water and milk when

- (i) they are taken with same masses
- (ii) they are taken with same volumes



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Think And Discuss

1. Let us suppose you have two blocks and you do not know what material they are made of. The volume of one block is 30 cm^3 while the other is 60 cm^3 . The second block is heavier than the first. Based on this information, can you tell which of the two blocks is denser?



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2. Find the weight of the atmosphere around the earth (take the radius of earth as 6400 km .)



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3. Why is it easier for you to float in salt water than in fresh water?



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4. Why is there no horizontal buoyant force on a submerged body?



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5. Two solid blocks of identical size are submerged in water. One block is iron and the other is aluminium. Upon which is the buoyant force greater?



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1. Why do some objects float on the water and some sink?

(AS_1)



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2. Explain density and relative density and write their formulae.

(AS_1)



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3. How can you find the relative density of a liquid ? (AS_1)



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Application On Concepts

1. A solid sphere has a radius of 2 cm and a mas of $0.05kg$.

What is the relative density of the sphere ? (AS_1)



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2. A small bottle weigh 20 g when empty and 22 g when filled with water. When it is filled with oil it weight $21.76g$. What is the density of oil ? (AS_1)



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3. An ice cube floats on the surface of water filled in glass tumbler (density of ice = $0.9g/cm^3$). Will the water level in

the glass rise when the ice melts completely? (AS_1)



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4. Find the pressure at a depth of 10 m in water if the atmospheric pressure is 100kPa.

$$[1Pa = 1N/m][100kPa = 10^5 Pa = 10^5 N/m^2 = 1atm.] (AS_1)$$



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Higher Order Thinking Questions

1. Can you make iron to float in water ? How ? (AS_3)



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2. Do all objects that sink in water, sink in oil ? Give reason.

(AS₁)



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Multiple Choice Questions

1. Unit of relative density is

A. g / cm^3

B. cm / g^3

C. N / m^2

D. No units

Answer:



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2. The instrument used to measure the purity of milk is

- A. Barometer
- B. Hygrometer
- C. Lactometer
- D. Speedometer

Answer:



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3. If $P_0 =$ Pressure, $n =$ Density, $h =$ height, and $g =$ acceleration due to gravity then the atmospheric pressure =

A. $P_0 = \rho gh$

B. $P = \rho gh$

C. $P = \rho gh$

D. $P = \frac{1}{2} \rho gh$

Answer:



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4. The first barometer with mercury was invented by

A. Pascal

B. Archimedis

C. Newton

D. Torricelli

Answer:



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5. The hydraulic jockey which is used in automobile work shops, works on the principle of

- A. Archimedes
- B. Pascal
- C. Toreecelli
- D. Newton

Answer:



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6. The density of water at $25^{\circ}C$ is

A. $1g/cm^3$

B. $2g/cm^3$

C. $3g/cm^3$

D. $0.99g/cm^3$

Answer:



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