

## Fluids

### MCQs:

#### Fluid statics

1. A body weighs 60grams in air and 40 gram in water. The specific gravity of the body is:  
a. 0.5                      b. 1.5                      c. 3                      d. 5
2. A body weighs 160 gm in air, 130 gm in water and 136 gm in oil. The specific gravity of oil is  
a. 0.8                      b. 1.3                      c. 1.6                      d. 3.2
3. A block of wood floats in the water with  $\frac{2}{3}$  rd of its volume submerged. The density of the wood will be  
a. 0.33 gm/cm<sup>3</sup>      b. 0.66 gm/cm<sup>3</sup>      c. 0.56 gm/cm<sup>3</sup>      d. 1 gm/cm<sup>3</sup>
4. The common hydrometer reads 1.6 specific gravity. The mark 1.5 is  
a. upwards      b. same at that place      c. downwards      d. depends on the hydrometer
5. A wooden block of 120 kg floats in water and its density is 600 kg/m<sup>3</sup>. What mass can be put on the block to make it just sink?  
a. 20 kg                      b. 40 kg                      c. 60 kg                      d. 80 kg
6. A balloon has a volume of 1000 m<sup>3</sup>. It is filled with hydrogen gas of density 0.09 Kg/m<sup>3</sup>. If the density of air is 1.29 kg/m<sup>3</sup>, it can lift a total weight of  
a. 400 kg                      b. 600 kg                      c. 1000 kg                      d. 1200 kg
7. A boat having a length of 3 m and a breadth of 2 m is floating on a lake. The boat sinks by 1 cm when a man gets on it. The mass of the man is  
a. 15 kg                      b. 60 kg                      c. 72kg                      d. 90 kg
8. When an air bubble rises from the bottom of a lake to the surface, its radius doubles (under isothermal condition). The atmospheric pressure is equal to that of a column of water at the height of h. The depth of the lake is:  
a. h                      b. 3h                      c. 5h                      d. 7h
9. The value of g at a place decrease by 2% The barometric height of the mercury  
a. increases by 2%                      b. decreases by 2%  
c. remains unchanged                      d. sometimes increases and sometimes decreases
10. A stone suspended on a string falls. The tension in the string will be  
a. greater than its weight                      b. smaller than its weight but not zero  
c. zero                      d. cannot be predicted

- A. A body floats in a liquid contained in a beaker. The whole system falls freely under gravity. The upthrust on the body due to liquid is  
a. Zero                      b. Equal to weight of displaced liquid  
c. Equal to weight of body in air                      d. Equal to the weight of immersed portion of the body
- B. Two solids A and B float in water. A floats with  $\frac{2}{3}$  rd of its volume immersed and B floats with  $\frac{1}{2}$  th of its volume immersed. The ratio of density of A and B is:  
a. 4:3                      b. 3:4                      c. 1:3                      d. 3:1
- C. The weight of 1Kg block of iron having volume  $1.3 \times 10^{-4} m^3$  is immersed in water measured by the spring balance is  
a. 6N                      b. 6.7N                      c. 8.7N                      d. 9.7N
- D. Buoyancy depends on:  
a. shape of the body      b. depth                      c. mass of the body      d. mass of the liquid displaced
- E. The weight of 1Kg block iron having a volume  $1.3 \times 10^{-4} m^3$  immersed in water, as measured by a spring balance is  
a. 7.7N                      b. 8.7N                      c. 6N                      d. 6.7N
- F. For a body floating in water, the apparent weight is equal to  
a. actual weight      b. weight of liquid displaced      c. more than real weight      d. zero