

**BCM SCHOOL, BASANT AVENUE, DUGRI
ROAD, LDH**

ASSIGNMENT OF MONTH DECEMBER

CLASS – XI

SUBJECT – PHYSICS

**CHAPTER – MECHANICAL PROPERTIES OF
FLUIDS**

12. In a soap bubble, pressure difference is

- (a) $\frac{2 S_{la}}{r}$ (b) $\frac{4 S_{la}}{r}$
 (c) $\frac{S_{la}}{r}$ (d) $\frac{8 S_{la}}{r}$

13. If two soap bubbles of different radii are connected by a tube,

- (a) air flows from the bigger bubble to the smaller bubble till the sizes become equal
 (b) air flows from bigger bubble to the smaller bubble till the sizes are interchanged
 (c) air flows from the smaller bubble to the bigger
 (d) there is no flow of air

14. A 20 cm long capillary tube is dipped in water. The water rises up to 8 cm. If the entire arrangement is put in a freely falling elevator the length of water column in the capillary tube will be

- (a) 4 cm (b) 20 cm
 (c) 8 cm (d) 10 cm

15. In a streamline flow,

- (a) the speed of a particle always remains same
 (b) the velocity of a particle always remains same
 (c) the kinetic energies of all the particles arriving at a given point are the same
 (d) the potential energies of all the particles arriving at a given point are the same

16. In a turbulent flow, the velocity of the liquid molecules in contact with the walls of the tube is

- (a) zero
 (b) maximum
 (c) equal to critical velocity
 (d) may have any value

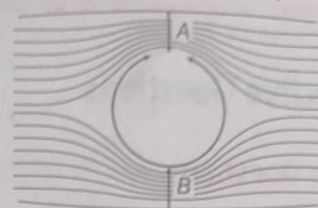
17. Two water pipes of diameters 2 cm and 4 cm are connected with the main supply line. The velocity of flow of water in the pipe of 2 cm diameter is

- (a) 4 times that in the other pipe
 (b) $\frac{1}{4}$ times that in the other pipe
 (c) 2 times that in the other pipe
 (d) $\frac{1}{2}$ times that in the other pipe

18. An ideal fluid flows through a pipe of circular cross-section made of two sections with diameters 2.5 cm and 3.75 cm. The ratio of the velocities in the two pipes is (NCERT Exemplar)

- (a) 9 : 4 (b) 3 : 2 (c) $\sqrt{3} : \sqrt{2}$ (d) $\sqrt{2} : \sqrt{3}$

19. A ball is moving without spinning in a straight line through a fluid (as shown)



If p_A and p_B are pressure values at A and B, then

- (a) $p_A < p_B$ (b) $p_B < p_A$
 (c) $p_A \times p_B = 1$ (d) $p_A / p_B = 1$

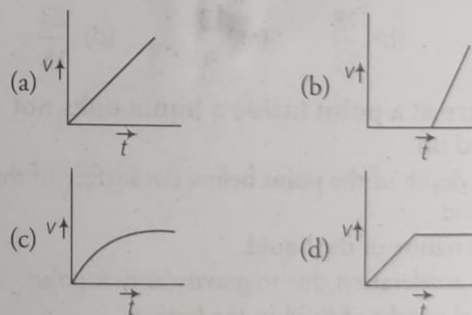
20. A cylinder of height 20 m is completely filled with water. The velocity of efflux of water (in ms^{-1}) through a small hole on the side wall of the cylinder near its bottom is

- (a) 10 (b) 20
 (c) 25.5 (d) 5

21. The coefficient of viscosity for hot air is

- (a) greater than the coefficient of viscosity for cold air
 (b) smaller than the coefficient of viscosity for cold air
 (c) same as the coefficient of viscosity for cold air
 (d) increases or decreases depending on the external pressure

22. A tall cylinder is filled with viscous oil. A round pebble is dropped from the top with zero initial velocity. From the plot shown in figure, indicate the one that represents the velocity (v) of the pebble as a function of time (t) (NCERT Exemplar)



23. As the temperature of water increases, its viscosity

- (a) remains unchanged
 (b) decreases
 (c) increases
 (d) increases or decreases depending on the external pressure

24. Reynold's number (R_e) can be defined as

- (a) $\frac{\rho \eta}{\nu d}$ (b) $\nu d / \rho$ (c) $\frac{\rho \nu d}{\eta}$ (d) $d \rho \nu / \eta$