

Std - XI

Mechanics of fluids

1. State and prove Pascal's law for fluids at rest.
2. With the help of a labelled diagram explain the working of a hydraulic lift.
3. Discuss the variation of fluid pressure with depth. Hence explain how Pascal's law is affected in the presence of gravity.
4. Torricelli's barometer used mercury. Pascal duplicated it using French wine of density 984 kg/m^3 . Determine the height of the wine column for normal atmospheric pressure.
5. Why are bags and suitcases provided with broad handles?
6. Why the passengers are advised to remove the ink from their pens while going up in an aeroplane?
7. Why two holes are made to empty an oil tin?
8. Distinguish between streamline and turbulent flow?
9. What is Reynold's number? What is its significance?
10. State and prove Bernoulli's principle for the flow of non viscous fluids.
11. What is dynamic lift? If a ball is thrown and given a spin then the path of the ball is curved more than in a usual spin free ball. Why?
12. Why is it dangerous to stand near the edge of the platform when a fast train is crossing it?