

Physics - FSC Part 1 Physics Chapter 6 Short Questions Preparation

Q1. Considering Bernoulli's principle, explain the working of a carburetor of a motor car.

Ans 1: The carburetor of a car engine uses a Venturi duct to feed the correct mix of air and petrol to the cylinders. The air through the duct moves very fast, creating low pressure in the duct, which draws petrol vapour into the air stream and enters the cylinder of the engine, where combustion occurs.

Q2. Why should Chimney be tall for its better working?

Ans 1: A Chimney works best when it is tall and exposed to air currents, which reduces the pressure at the top and force the upward flow of smoke.

Q3. Describe the method of measuring human blood pressure.

Ans 1: The blood pressure of a person is measured using a device called sphygmomanometer. A stethoscope detects the instant at which the external pressure becomes equal to the systolic pressure. At this point, the blood flow through the vessel with very high speed. As a result, the flow is initially turbulent. As the pressure drops, the external pressure eventually equals the diastolic pressure. The flow of the blood switches from turbulent to laminar, and gurgle in the stethoscope disappears. This is the signal to record the diastolic pressure.

Q4. What are conditions of an ideal fluid?

Ans 1: For an ideal fluid, the conditions are:

1. The fluid is non-viscous.
2. The fluid is incompressible.
3. The fluid motion is steady.

Q5. Explain how the swing is produced in a fast moving cricket ball.

Ans 1: When the cricket ball is thrown in such a way that it spins as well as moves forward, the velocity of the air on one side of the ball increases due to the spin and hence the pressure decreases. So the swing is produced in a fast moving cricket ball.

Q6. Two boats moving parallel in the same direction are pulled toward each other.

Ans 1: According to Bernoulli's equation, where the speed is high, pressure will be low. So the pressure between the two boats decreases as compared to the pressure of sideways. So the sideways high pressure pushes the two boats towards each other.

Q7. Explain what you understand by term Viscosity?

Ans 1: The frictional effect between the layers of the flowing fluid is called viscosity. Viscosity measures, how much force is required to slide one layer of liquid over another layer.
Thick tar and honey have large coefficient of viscosity than water.

Q8. How an aeroplane is lifted up?

Ans 1: The wing of the aeroplane is designed to deflect the air so that the streamlines are closer together above the wing than below it. Thus, air is travelling faster on the upper side of the wing than on the lower. As the result, the pressure will be lower at the top of the wing, and the wing will be forced upward.

Q9. A person is standing near a fast moving train, is there any danger that he will fall towards it?

Ans 1: According to Bernoulli's equation. Where the speed is high, pressure will be low. So the pressure between the person and train will be low as compared to the pressure of side way. So there is a danger that he may fall towards the train.

Q10. Describe any application of Bernoulli's equation.

Ans 1: When the cricket ball is thrown in such a way that it spins as well as moves forward, the velocity of the air on one side of the ball increases due to the spin and hence the pressure decreases. So the swing is produced in a fast moving cricket ball. And it is just in accordance with Bernoulli's equation.
