ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

- **Subject- Physics**   **Worksheet- 5**   **Class – IX**

- **Date-17.04.2020**   **1st** Term

- ## Topic-Numericals on laws of Motion

Question 1.
During the game of table tennis, if the ball hits a player it does not hurt him. On the other hand when a fast moving cricket ball hits a spectator it may hurt him. State reason.

Question 2.
Define the first law of motion.

Question 3.
Why do a back seater moves forward when a fast moving bike is stopped suddenly?

Question 4.
When a carpet is beaten with a stick it releases dust. Explain why.

Question 5.
Name the physical quantity that measures inertia. State its SI unit.

Question 6.
Name the property of bodies by virtue of which they resist a change in their state of rest or of uniform motion.

Question 7.
What is the momentum of a body of mass 5 kg moving with a velocity of 0.20 m/s.

Question 8.
Write the net force acting on a bus, of mass 2000 kg, moving with a uniform velocity of 60 km/h.

Question 9.
State the relation between the momentum of a body and the force acting on it.

Question 10.

A body of mass 25 kg has a momentum of 125 kg m/s. calculate the velocity of the body.

Question 11.
Name the physical quantity which is measured/ determined by the rate of change of momentum.

Question 12.
What is the mathematical formula and SI unit of momentum?

Question 13.
What force would be needed to produce an acceleration of 4 m/s^2 on a ball of mass 6 kg?

Question 14.
A bullet of 10 g strikes a sand bag at a speed of 10^{3}m/s and gets embedded after travelling 5 cm. Calculate
(i) the resistive force exerted by the sand on the bullet.
(ii) the time taken by the bullet to come to rest.

Question 15.
A force of 5 N produces an acceleration of 8 m/s^{2}on a mass m_1m1 and an acceleration of 24 m/s^2 on a mass m_2m2. What acceleration would the same force provide if both the masses are tied together?

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