INDIAN SCHOOL NIZWA - WORKSHEET

PHYSICS

CH: FORCE AND LAWS OF MOTION Class: IX

I SHORT ANSWER TYPE

1. The mass of an object A is 6 kg and that of another object B is 34kg. Which of the two objects, A or B, has more inertia?
2. Name the unbalanced force which slows down a moving bicycle when we stop pedalling it.
3. When a ball is dropped from a height, its speed increases gradually. Name the force which causes this change in speed.
4. Name the property of bodies to resist change in their state of rest or uniform motion.
5. When a tree is shaken, its fruits and leaves fall down. Why?

II NUMERICALS

6. A man throws a ball weighing 500g vertically upwards with a speed of 10m/s. (i) what will be its initial momentum? (ii) What would bet its momentum at its highest point of flight?
7. Calculate the force required to impart to a car a velocity of 30m/s in 10s starting from rest. The mass of th car is 1500kg.
8. A truck starts from rest and rolls down a hill with constant acceleration. It travels a distance of 400m in 20s. Find the force acting on it if its mass is 7000kg.
9. A force of 5N gives a mass m_1 and acceleration of $8m/s^2$, and a mass m_2 an acceleration of $24m/s^2$. What acceleration would it give if both the masses were tied together?
10. Which would require a greater force – accelerating a 10g mass at $5m/s^2$ or a 20g mass at $2m/s^2$?
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12. For how long should a force of 10N to stop a mass of 2.5 kg which is moving at 20m/s?
13. A 10g bullet travelling at 200m/s strikes and remains embedded in a 2 Kg target which is originally at rest but free to move. At what speed does the target move off?
14. A boy of mass 50 Kg running at 5m/s jumps on to a 20kg trolley travelling in the same direction at 1.5m/s. What is their common velocity?
15. A heavy car A of mass 2000kg travelling at 10m/s has a head on collision with a sports car B of mass 500kg. If both the cars stop dead on colliding, what was the velocity of car B?
16. A 1000kg vehicle moving with a speed of 20m/s is brought to rest in a distance of 50m.(i) find the acceleration (ii) calculate the unbalanced force acting on the vehicle.
17. A car of mass 2400kg moving with a velocity 20m/s is stopped in 10s on applying brake. Calculate the

retardation and retarding force.

18. A 60g bullet fired from a 5 kg gun leaves with a speed of 500m/s. Find the speed with which the gun recoils .