



# INDIAN SCHOOL NIZWA - WORKSHEET

## PHYSICS

### CH: 5 LAWS OF MOTION

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: XI Sec:   A  

1.	When external force is not applied to a system, its total momentum A. Becomes zero B. Remains constant C. Increases gradually D. Decreases gradually <sup>2</sup>
I	SHORT ANSWER
1.	What is the effect on the acceleration of a particle if the net force on the particle is triple
2.	Why does a heavy gun not kick so strong as light gun using the same cartridges?
3.	If the action and reaction are equal and opposite, why do they never cancel each other?
4.	Why an athlete does runs some steps before taking a jump?
5.	Vehicles stop on applying brakes. Does this phenomenon violate the principle of conservation of momentum?
6.	Two blocks of masses $m_1$ and $m_2$ are connected by a light spring on a smooth horizontal surface. The two masses are pulled apart and then released. Prove that the ratios of their acceleration are inversely proportional to their masses.
7.	Why a horse has to pull a cart harder during the first few steps of his motion?
	NUMERICALS
11.	A body placed on a rough inclined plane just begins to slide, when the slope of the plane is 1 in 4. Calculate the coefficient of friction.
12.	A bus starts from rest accelerating with $4\text{m/s}^2$ . At $t = 10\text{s}$ , a stone is dropped out of a window of the bus 2m high. What are the (i) magnitude of velocity and (ii) acceleration of the stone at 10.2s? take $g = 10\text{m/s}^2$ .
13.	A force of 10N acts on a body for 3 microsecond. Calculate the impulse. If mass of the body is 5g, calculate the change in velocity.
14.	A car negotiates a banked circular road of radius 50m at a speed of 72km/hr. Which tyres of the car will wear out faster? Calculate the angle of banking so that the car is able to negotiate the curve at that speed.
15.	A cyclist speeding at 18km/hr on a level road takes a sharp circular turn of radius 3m with out reducing the speed. The coefficient of static friction between the tyres and the road is 0.1. will the cyclist slip, while taking the turn?



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