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**Max Time : 1 hr** **Class = 9th Science Test Max Marks : 25**

**FORCES AND LAWS OF MOTION**

1. MCQs: [ 1 x 5 = 5 ]
2. Why does a person in a bus tend to fall forward, when the bus stops suddenly? This is due to :
3. Inertia of motion of upper part of his body.
4. Inertia of motion of lower part of his body.
5. Inertia of rest of the person.
6. None of the above.
7. When a branch of a tree is shaken, some of the fruits may fall down. This happens due to :

|  |  |
| --- | --- |
| a) Inertia of rest | b) Inertia of motion |
| c) Inertia of direction | d) None of the above |

1. A heavy object is at rest. Its linear momentum is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Zero | b) large | c) small | d) no one |

1. The S.I. unit of linear momentum is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Newton | b) Dyne | c) kg m/s | d) g m/s |

1. The inertia of an object tend to cause the object :
2. To increase its speed.
3. To decrease its speed.
4. To resist any change in its state of rest or motion.
5. To decelerate due to friction.
6. Describe linear momentum. [ 1 ]
7. Define force. [ 1 ]
8. Describe Newton’s First law of motion. [ 1 ]
9. Why does an athlete put some sand or cushion on the ground while high jumping? [ 2 ]
10. Describe Newton’s Third law of motion. [ 2 ]
11. Describe balanced and unbalanced forces. [ 2 ]
12. What is the acceleration produced by force of 12 newton exerted on object of mass 3 kg? [ 2 ]
13. A force of 5 N gives a mass m1 an acceleration of 8 m/s2 and a mass m2, an acceleration of 24 m/s2. What acceleration would give if both the masses are tied together? [ 3 ]
14. A truck starts from rest and rolls down a hill with a constant acceleration. It travels a distance of 400 m in 20 s. Find its acceleration. Find the force acting on it if its mass is 7 metric tonnes. [ 3 ]
15. An object of mass 100 kg is accelerated uniformly from a velocity of 5 m/s to 8 m/s in 6 sec. calculate initial and final momentum. also, calculate the force exerted on the object. [ 3 ]