PHYSICS

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Board – ICSE	Class – 9th	Topic – Laws of motion

1. Answer the following:
   (a) What do you understand by the term inertia?
   (b) What determines the inertia of a body?
   (c) Define two kinds of inertia. Support your answer with one example each.
2. Answer the following:
   (a) What do you understand by the term momentum?
   (b) State two factors which determine momentum of a body?
3. Show that rate of change of momentum is the product of mass and acceleration.
4. Answer the following:
   (a) State Newton's law of gravitation.
   (b) Derive mathematical expression for the gravitational force based on universal law of gravitation.
5. If the distance between two bodies is increased 4 times, by which factor, should the mass of one body be altered, so that gravitational force between them remains same.
6. Answer the following:
   (a) What do you understand by the term "force of gravitation"?
   (b) Is the force of gravitation attractive or repulsive force?
   (c) Does the force of gravitation exist at all places in the universe? Explain your answer.
7. The rate of change of momentum of a body is 3 kg ms^{-2}. What is the force acting on the body?
8. (i) Why do objects fall towards the earth?
   (ii) What do you mean by action?
9. State Newton's second law of motion.
10. A body starts from rest with a uniform acceleration of 2 ms^{-2}. Find the distance covered by the body in 2 s.
11. What do you mean by inertia of motion? Give one example each of inertia of rest and inertia of motion.