One Two Academy

Xth Standard

Science **Marks: 35**

I. Answer The Following: (7 x 2= 14)

1. a) A man of mass 100 kg has a weight of _____ at the surface of the Earth.
   b) The mass of a body is measured on planet Earth as M kg. When it is taken to a planet of radius half that of the Earth then its value will be____ kg
2. State the principle of moments.
3. How does an astronaut float in a space shuttle?
4. If a 5 N and a 15 N forces are acting opposite to one another. Find the resultant force and the direction of action of the resultant force
5. **State True or False and correct the statements if false:**
   a) Turning a nut with a spanner having a short handle is so easy than one with a long handle.
   b) Apparent weight of a person is always equal to his actual weight.
6. Differentiate mass and weight.
7. State the universal law of gravitation

II. Answer The Following: (2 x 3= 6)

1. A heavy truck and bike are moving with the same kinetic energy. If the mass of the truck is four times that of the bike, then calculate the ratio of their momenta.
2. State Newton's First and Second law of motion.

III. Answer In Detail: (3 x 5= 15)

1. State and prove the law of conservation of linear momentum.
2. Describe rocket propulsion.
3. What are the types of inertia? Give an example for each type.