ONE TWO ACADEMY

STD 10 SCIENCE

Laws of Motion

Total:- 25 marks **Time:- 45 minutes**

Answer the following questions: **4 x 1 = 4**

1. What are the principles that are used in the propulsion of rocket?
2. State Newton's third law of motion.
3. Give the relation between g and G.
4. Give the SI unit for Torque.

Answer any three of the following questions:- **3 x 2 = 6**

5. While catching a cricket ball the fielder lowers his hands backwards. Why?
6. Give applications of the universal law of gravitation.
7. State the principle of moments.
8. A door is pushed, at a point whose distance from the hinges is 90cm, with a force of 40N. Calculate the moment of force about the hinges.

Answer any two of the following questions:- **2 x 4 = 8**

9. Define Inertia. Explain its types with suitable examples.
10. a) Differentiate mass and weight.
    b) If Ram's mass is 60kg on the surface of the Earth
        (i) Calculate his mass on the surface of the moon.
        (ii) Calculate the weight on the surface of the moon.
11. State Newton's universal law of gravitation and derive it's mathematical expression.

Answer any one of the following questions:- **1 x 7 = 7**

12. State the *law of force* and deduce F = ma.
13. Prove that " In the absence of external force, the algebraic sum of momentum after collision is numerically equal to the sum of momentum before collision."

All the Best | One Two Katral maiyam