**Gravity** (p. 403 – 410)

**I. Weight & Mass**

**1. Define the term weight.**

Weight –

**2. What is the acceleration of free falling objects near Earth’s surface?**

\_\_\_\_\_\_\_\_\_\_ meters / second2

**3.** **Write out the equation to determine weight.** *(Variation of Newton’s 2nd Law)*

Weight = *w* =

**4.** **The SI unit for weight is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**5. Define the term mass.**

Mass –

**6. Weight and mass are proportional. As mass increases, weight increases.**

Circle One : True False

**7. Mass changes from planet to planet.**

Circle One : True False

**II. Law Of Universal Gravitation**

**1.** **State Newton’s Law Of Universal Gravitation.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2.** **Write out the equation for Newton’s Law Of Universal Gravitation.**

Force of Gravity = *Fg* =

**3. All objects in the universe are attracted to each other.**

Circle One : True False

**4. What happens to gravitational force as :**

Mass Increases : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Distance Increases : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**III. Free Fall**

**1. Define the term free fall.**

Free Fall –

**2. All objects near Earth’s surface free fall at the same rate of acceleration.**

Circle One : True False

**3.** **Define the term air resistance.**

Air Resistance –

**4. Which statement is false concerning air resistance?**

a. Air resistance causes objects to fall with different accelerations and different speeds.

b. Air resistance acts in the same direction to the motion of an object through air.

c. The size of the air resistance force depends on the size and shape of the object.

d. When air resistance and weight are equal, an object stops accelerating.

**5. As an object falls faster, the upward force of air resistance decreases.**

Circle One : True False

**6. Define the term terminal velocity.**

Terminal Velocity -

**7. List three examples of people experiencing apparent weightlessness.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**IV. Projectile Motion**

**1. Define the term projectile motion.**

Projectile Motion –

**2. List three examples of projectile motion.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. After launched, what are the following components of a projectile?**

Horizontal : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. An object launched horizontally will strike the ground faster than an object of the same**

**mass and shape dropped from the same height.**

Circle One : True False