Study Guide: Ch. 5, Projectile Motions

Answer the following questions and study the following topics to prepare for the upcoming multiple-choice quiz. Note you must know all relevant units.

1) What is the direction of Earth’s Gravity? What is the direction of the acceleration of an object due to this force.

2) A ball is thrown into the air at an angle. Neglecting air resistance, what is the ball’s acceleration in the vertical direction? What is its acceleration in the horizontal direction?

3) Why does the horizontal component of a projectile’s velocity remain constant? How does the velocity in the vertical direction change?

4) A car traveling at 20m/s and a truck traveling at 30m/s drive off a cliff. Which will hit the level ground first? Which will land further from the base of the cliff? What about a ball that is dropped from the cliff the instant the vehicles start their descent?

5) How is tangential velocity important to satellites? Is it true that a satellite is falling?

6) Does gravity act on a satellite?

7) Explain what the Escape Speed of a projectile is. How does it depend on the astronomical body where the projectile is located?