Space Flight Quiz

1. Which of the following requires the most energy to be thrown into the air?

2. When you throw an object straight up, why doesn't it fly off into space?
   a. There's too much thrust acting on the object
   b. Earth's atmosphere prevents the object from going into space
   c. The object travels too fast to reach Earth orbit
   d. The force of gravity pulls the object back down to Earth

3. Which two opposing forces are at work when a rocket flies into space?
   a. Drag and torque
   b. Gravity and thrust
   c. Thrust and torque
   d. Drag and gravity

4. A jet pack is a type of rocket system that can allow a human to "fly" for short distances. What can you infer about how jet packs work?
   a. The thrust created by a jet pack must be greater than the force of gravity acting on the user and the pack
   b. The user must weigh less than the jet pack to lift off the ground
   c. The weight of the fuel in the jet pack must be greater than the weight of the user in order to achieve lift off
   d. The force of gravity on the user must decrease as he is lifted off the ground

5. In this illustration of a liquid-fuel rocket, which letter represents the payload?

6. What is one main difference between solid-fuel rockets and liquid-fuel rockets?
   a. Solid-fuel rockets don't require an oxidizer to work; liquid-fuel rockets do
   b. Liquid-fuel rockets can't lift heavy payloads; solid-fuel rockets can
   c. Solid fuel-rockets launch with pre-mixed fuel and oxidizer; liquid-fuel rockets combine the fuel and oxidizer at launch
   d. Liquid-fuel rockets contain a higher proportion of oxidizer to fuel than solid-fuel rockets do

7. The combination of fuel and oxidizer in the presence of a spark or flame results in a combustion reaction. Which is another example of a combustion reaction?
   a. Mixing honey into a cup of tea
   b. Setting a piece of wood on fire
   c. Heating water until it boils
   d. Combining flour and sugar to make dough

8. Put the following into the correct order for a rocket launch: A) Heated gas is expelled; B) Oxidizer and fuel mix; C) Force of thrust exceeds force of gravity on the rocket.

9. Which part(s) of the U.S. space shuttle is/are not reusable?
   a. The orbiter  b. The external fuel tank  c. The solid rocket boosters  d. The main engine nozzles

10. The farther apart two objects are, the weaker the force of gravity is between them. What can you infer from this?
    a. A body orbiting Saturn feels a weaker gravitational pull from Earth than a body orbiting Mars
    b. The Earth's gravity exerts a stronger pull on spacecraft orbiting the moon than spacecraft in low-earth orbit
    c. A spacecraft that has left the solar system feels no gravitational pull whatsoever from Earth
    d. Any spacecraft launched from Earth will, given enough time, eventually fall into the sun