Name: Date: Class:

Engineering Design Quiz Answers

1. **In engineering, the design process begins when…**
   a. information about an existing product is gathered by an engineer
   b. an engineering design team comes up with ideas for a new product
   c. a design engineer recognizes the need for a solution to a problem
2. **Identifying the "target population" or "target audience" occurs during which step of the engineering design loop?**
   a. Identify the Need
   b. Research the Problem
   c. Develop Possible Solutions
3. **Engineers must understand the difference between requirements and constraints. Let's say a team of engineers is asked to design a pair of kids' tennis shoes for less than $20. They determine that the only way to manufacture shoes for this price is to use recycled materials. What is the team's *constraint*?**
   a. The shoes must be designed for kids
   b. The shoes must be made out of recycled materials
   c. The shoes must cost less than $20 to manufacture
4. **During a brainstorming session we want to focus *more* on:**
   a. quantity of ideas rather than quality
   b. quality of ideas rather than quantity
5. **Which step of the engineering design loop distinguishes an engineer from a technician?**
   a. Construct a Prototype
   b. Test and Evaluate a Prototype
   c. Redesign
6. **Although the terms "model" and "prototype" are often used interchangeably, they are not the same thing. A _____ is used to test different aspects of a product before the design is finalized. A _____ is used to demonstrate or explain how a product will look or function.**
   a. model, prototype

b. prototype, model

7. **When following the engineering design loop, the different stages can occur in which direction?**
    a. clockwise
    b. counter-clockwise
    c. both clockwise and counter-clockwise
    d. in any direction, including shortcuts
8. **The engineering design process is iterative. This allows engineers to…**
    a. become proficient at different engineering software applications
    b. find the most optimal solution to a design problem
    c. Incorporate both math and science concepts into a design problem
9. **When finding the solution to an engineering design problem, there is/are usually…**
    a. only one possible correct solution
    b. a very limited number of possible correct solutions
    c. many possible correct solutions