

## TED Unit 4 Pre-Test

**1. Which step of the engineering design process would use a graph to communicate the results?**

- A. Defining a problem
- B. Exploring possibilities
- C. Making a prototype
- D. Evaluating the design

**2. A working model used to test a design during development is called a:**

- A. prototype.
- B. constraint.
- C. product.
- D. master design.

**3. When designing a roof for a greenhouse a variety of angles must be measured and cut accurately. What tool should be used to measure the angles?**

- A. French curve
- B. Laser
- C. Protractor
- D. Ruler

**4. Three-dimensional models are typically used for:**

- A. simulating and testing design ideas.
- B. small batch production.
- C. a technical drawing.
- D. optimizing the manufacturing process.

**5. If Fred were to design a new type of cell phone and he builds a replica of what the case would look like, he would be constructing a(n):**

- A. duplicate.
- B. mock-up.
- C. prototype.
- D. experiment.

**6. The productivity of a design may be established by testing a:**

- A. prototype.
- B. working drawing.
- C. mock-up.
- D. conceptual model.

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**7. A speed boat is not permitted to go faster than 100 knots in a lake. Therefore, the company decides to redesign the throttle so it can only go 95 knots. This would be an example of a:**

- A. constraint.
- B. criteria.
- C. trade-off.
- D. design challenge.

**8. The general requirements and limitations that are incorporated into the design of a structure are known as:**

- A. creativity and innovation.
- B. form and function.
- C. criteria and constraints.
- D. marketability and safety.

**9. A design team is making a new container for milk, and the customer needs the container to be 9" tall exactly. The size specification is considered a:**

- A. criteria
- B. constraint
- C. limitation
- D. function

**10. Which design constraints are likely to compete with each other when designing a fuel cell for a rocket?**

- A. Color and material choice
- B. Programming and ease of use
- C. Weight and power output
- D. Warranty and radioactivity

**11. A design challenge is given that says, "create a bird house, but do not let it cost more than \$20.00 in materials". The cost of the birdhouse would be considered a:**

- A. criteria
- B. constraint
- C. requirement
- D. example

**12. Designing a vehicle within its given budget, the design team eliminated several features based on the original design. What is the relationship between criteria and constraints?**

- A. Enhancing
- B. Competing
- C. Eliminating
- D. Complimenting

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**13. A new office building has been planned and will be built in sunny, Phoenix, AZ. The roof will have a three foot overhang and the exterior walls will be constructed using twelve inch adobe brick. The design features of this building have been established based on:**

- A. financial conditions.
- B. environmental conditions.
- C. enterprise conditions.
- D. usage conditions.

**14. Before a design solution can be refined, it should first be:**

- A. processed.
- B. sketched.
- C. marketed.
- D. tested.

**15. A design team finally developed a new product that will have significant impacts on the safety of space travel. The best way for them to communicate their findings is to:**

- A. put an article in the newspaper.
- B. produce a commercial on the radio.
- C. write an article for a "science" journal.
- D. purchase space on a billboard.

**16. The exchange of information in visual form, such as words, drawings, photographs, or a combination of these is:**

- A. linear logo.
- B. conceptual/graphic communication.
- C. mathematical modeling.
- D. virtual design.

**17. Which of the following must be clearly defined?**

- A. Design problems
- B. Product test results
- C. Product research
- D. Product drawings