

STEAM Center
Science Pre-Assessment SY 2023

Name _____

Grade _____

Date _____

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. Which of the following is not a definition of Design?
 - a. To conceive of fashion in the mind
 - b. To formulate a plan for; devise
 - c. To duplicate an existing idea
 - d. To plan out in a systematic, usually graphic form

2. Engineering at its fundamental level is:
 - a. Math
 - b. Problem solving
 - c. Science
 - d. Art

3. Process Engineers:
 - a. Determine the best way to make a product and to ensure it is built correctly.
 - b. Create plastic types for use in a product.
 - c. Design the mechanical aspects of a product.
 - d. Design the electrical aspects of a product.

4. What type of engineer is responsible for designing and integrating the sensors and software of a product?
 - a. Mechanical Engineer
 - b. Plastics Engineer
 - c. Electrical Engineer
 - d. Aeronautical Engineer

5. Which of the follow actions would not fit in a successful design team?
 - a. Keep an open mind.
 - b. Do not become overly attached to a single idea.
 - c. Do not get offended if a conflict arises.
 - d. Be defensive of ideas.

6. Quantitative Arguments are _
 - a. Ones that can be measured
 - b. Ones that cannot measured
 - c. Ones that have a variable quantity
 - d. Ones that have an unknown quantity

7. Which of the following is not a part of the simple 3 step design process loop?
- Implement
 - Test
 - Ideate
 - Design
8. Which step of the design process does includes doing background research on the problem be solved?
- Understand
 - Explore
 - Define
 - Ideate
9. Which of the following is not a rule for brainstorming?
- Focus on the quantity of the ideas generated
 - Focus on the quality of the ideas generated
 - Reserve judgment
 - Record all ideas
10. The process of repeating the design process over and over again in known as:
- Refining
 - Repetition
 - Ideate
 - Iteration
11. An Engineering Notebook is:
- A record of the design process.
 - A loose leaf binder with engineering notes and calculations.
 - An electric document detailing the design process.
 - A collection of records, loose leaf binders and electronic documents of the design process.
12. Gears may be used to
- Change rotational speed.
 - Increase torque.
 - Decrease torque.
 - Change rotational direction.
 - All of the above.
13. The electrical symbol show represents a



- Resistor
- Capacitor
- Battery
- LED

e. Switch

14. A robot has an average speed of 4.0 in/s. How long will it take the robot to travel 60 in?

- a. 64s
- b. 240s
- c. 60s
- d. 15s
- e. 30s

15. The electrical symbol show represents a



- a. Resistor
- b. Capacitor
- c. Battery
- d. LED
- e. Switch

Short Answer

1. What is technology?

2. Robotics studies

3. What is a robot?

4. Characteristics of a robot

5. Compound machines
