

## Principles of Design

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. Prototyping using a 3D model is done by creating a stereolithography file with a \_\_\_\_\_ extension.
  - a. .prt
  - b. .stl
  - c. .mdl
  - d. .msl
  
2. The first release of a drawing as revision A is the \_\_\_\_\_ release.
  - a. Production
  - b. Experimental
  - c. Prototype
  - d. Manufacturing
  
3. Most of the designs done by major Architecture and Engineering groups begin with
  - a. Defining the problem
  - b. Refining the design
  - c. Defining the criteria
  - d. The design review
  
4. When a dimension or detail is missing from a simple drawing on a prototype, the project designer should generally hold the drawing until the information is found.
  - a. True
  - b. False
  
5. Defining the design criteria is important, so anyone on the design team knows how to participate in the decision making process. If the customer's number one criteria are "quietness of the design" and the next is the volume of the air circulated, answer the junior designer's question. "Project designer, I can obtain an ultra quiet bearing that has a maximum Rpm of only 500. Should I order the bearing?"
  - a. Yes
  - b. No

Why: \_\_\_\_\_
  
6. When ordering free samples from a manufacturer for the "quiet fan" prototype, the project designer should ask for multiple sample pieces. Circle all of the applications to be tested on the prototype when attached to the main assembly.

a. Shipping test	b. Product Life test
c. Drop test	d. Vibration test
e. Sound test	f. Heat test
g. Dielectric test	h. Cold test
  
7. Departmental project briefs are done weekly, so the \_\_\_\_\_ and the entire staff are kept current on all projects.
  - a. The customer
  - b. The client
  - c. Department Manager
  - d. The investors

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8. When working on an entirely new design, every concept should be placed into the first production release or stagger the innovation over a period of time through annual revisions.
- First production release
  - Staggered over numerous product releases
9. Efficient brainstorming is done in an Architectural and Engineering group that \_\_\_\_\_ have the knowledge of the customer requirements.
- Does
  - Does not
10. The project Gant chart should contain the start and end date for all the items that will be done.
- True
  - False
11. When forming a design team, diversity is just as important as specialization. For a modern digital electronics product, prioritize the positions to recruit. Label the positions 1 through 6, with 1 being the highest priority.
- |  |                        |
|--|------------------------|
|  | a. Software Developer  |
|  | b. Electrical Engineer |
|  | c. Mechanical Designer |
|  | d. Civil Engineer      |
|  | e. Structural Engineer |
|  | f. Project Designer    |
12. The project log contains all the items that are completed.
- True
  - False
13. A project designer should choose to design \_\_\_\_\_ first before complex electronics when developing products for a new organization.
- Automotive Engines
  - Textile goods
  - Computer boards
  - Die castings
14. Cardboard, plastic building pieces and \_\_\_\_\_ are excellent prototyping mediums for designers to convey their ideas of three dimensional products.
- Welding tubes
  - Two part epoxy
  - Plaster casts
  - Modeling clay
15. Meet with the customer as often as possible. Send the customer \_\_\_\_\_ reports on your project.
- Monthly
  - Daily
  - Weekly
  - Yearly