Technical Drawing with Engineering Graphics 16th edition Giesecke Solutions Manual

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Suggested answers for the Review Questions for Chapter 1

1. When is sketching used as graphic communication?

   Sketching provides technical people with a quick way to communicate ideas effectively, without the use of special drafting and design equipment.

2. Why are standards so important for members of the engineering design team?

   As with any communication method, standards provide a common method of communication between members of the team, manufacturers, and other engineering teams that may be involved in the design, manufacturing, and documentation process. The American National Standards Institute's Engineering Drawing Practices Manual – ANSI/AMSE Y14 provides the generally accepted standards in the United States.

3. What is the design process?

   An organized and orderly approach to solving problems involving engineering design.

4. What are four general stages of the design process?
   a. ***Identify the Problem***
   b. ***Generate Concepts***
   c. ***Refine ideas through Analysis, Models, and Prototypes***
   d. ***Implement the design through the production of Working Drawings and other documentation.***

5. Describe the difference between concurrent and traditional design process models.

   The traditional design process is a sequential process, where one stage is completed before the next stage begins. The concurrent design process is a systematic approach that integrates design and manufacturing to optimize the product.

6. What does PDM or EDM stand for? What are some advantages of PDM?

   PDM – product data management

   EDM – enterprise data management

   The PDM system allows all the product data to be quickly stored, retrieved, displayed, printed, managed, and transferred to other parts of the organization.

7. When are rapid prototypes useful?

   Extremely beneficial when rapid response time is essential. Rapid prototyping allows designers to generate parts quickly, directly from 3D models, for mockup and testing.

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8. List three ways a CAD database can be used.

   Modeling 2D and 3D geometry to create drawings that document design for manufacturing, verify usability, and export data to CAE systems for kinematic analysis.

9. List five techniques you can use to enhance creativity.

   a. ***Examine manufactured products***
   b. ***Study the natural world***
   c. ***Watch the Web***
   d. ***Research patent drawings***
   e. ***Design groups***