

Unit 1: Introduction to Structural Drafting

MULTIPLE CHOICE

1. A structural CAD technician may be called upon to prepare drawings that provide an overall picture of a job for marketing purposes. What type of drawings would be suitable in presenting this overview?
- a. Engineering drawings
 - b. Shop drawings
 - c. Production drawings
 - d. Strategic drawings

ANS: A PTS: 1 REF: Types of Structural Drawings

2. Detailed drawings created by structural CAD technicians are essential for designing, fabricating, manufacturing, and erecting the structural products that go into a job. What type of drawings should be implemented to provide this information?
- a. Engineering drawings
 - b. Shop drawings
 - c. Comprehensive drawings
 - d. Inclusive drawings

ANS: B PTS: 1 REF: Types of Structural Drawings

3. What information would you expect to find in an engineering drawing?
- a. Fabrication details for every structural member in a job
 - b. Details of miscellaneous metal connectors required
 - c. Locations of major structural components such as columns, beams, and girders
 - d. Bills of material listing every item that will be used during fabrication of the products and erection of the final structure

ANS: C PTS: 1 REF: Types of Structural Drawings

4. In structural drafting, the CAD technician makes extensive use of lines to show the outline of the object being drawn. Which line type does this describe?
- a. Illustration lines
 - b. Physical lines
 - c. Entity lines
 - d. Object lines

ANS: D PTS: 1 REF: Review of Drafting/CAD Techniques

5. The outline of a roof that is actually above a framing plan may be included in a structural drawing for the purpose of clarity. Which line type would be used for this component of the drawing?
- a. Phantom lines
 - b. Ghost lines
 - c. Hidden lines
 - d. Vision lines

ANS: A PTS: 1 REF: Review of Drafting/CAD Techniques

6. A CAD technician often includes lines in a structural drawing to show the edges or outlines of structural components that are important but could not be seen by an actual viewer of a given part of a structure. These lines are known as ____.
- a. phantom lines
 - b. ghost lines
 - c. hidden lines
 - d. non-visual lines

ANS: C PTS: 1 REF: Review of Drafting/CAD Techniques

7. Measurements are essential in structural drafting. Size and distance are indicated in structural drafting with lines that are enclosed by extension lines. Which line type is used for this purpose?
- a. Dimension lines
 - b. Size lines
 - c. Dashed lines
 - d. Scaling lines

ANS: A

PTS: 1

REF: Review of Drafting/CAD Techniques

8. Computer-aided drafting, or CAD, is now the norm in the modern structural engineering department. Which of the following statements helps explain this practice?
- Not only has CAD simplified the issue of engineering lettering, it also allows each technician to express a great deal of individual creativity.
 - CAD drawings include many choices for paper sizes, thus, the standard sizes B, C, and D, are used much less frequently.
 - The use of scales is much easier with CAD systems since the scale is selected before beginning the drawing.
 - The consistent quality of the linework and lettering is much improved in CAD systems as compared to hand drawings.

ANS: D

PTS: 1

REF: CAD Systems in Structural Drafting

9. Suppose a certain dimension in a structure is supposed to stay the same no matter what other changes might be made to the structure. The ability to set a directive in the software that determines how to respond to changes in parameters, such as the example presented, is an illustration of a concept known as ____.
- design intent
 - feature specification
 - parameter fixing
 - dimension control

ANS: A

PTS: 1

REF: Solid Modeling in Structural Drafting

SHORT ANSWER

1. In certain employment situations, such as with a consulting structural engineering firm, the structural CAD technician is often called upon to prepare plans for structures involving all four types of structural products. Name two of these four types.

ANS:

The four types of structural products include:

- structural steel
- precast concrete
- poured-in-place concrete
- structural wood

PTS: 1

REF: Employers of Structural CAD Technicians