

ENGINEERING DRAWING

ANSWER KEY

1. What is the primary purpose of a drawing board in engineering drawing?

. **Answer: B) To provide a stable surface for drawing**

. **Explanation:**

The drawing board provides a firm, stable surface for making precise drawings.

2. Which of the following instruments is specifically designed for drawing horizontal lines?

. **Answer: B) T-Square**

. **Explanation:**

A **T-Square** is used to draw straight, horizontal lines.

3. Which tool is used to draw precise angles of 30°, 45°, and 60° in engineering drawing?

. **Answer: C) Set Square**

- **Explanation:**

Set squares are used for drawing precise angles like 30°, 45°, and 60°.

4. What is the function of a compass in technical drawing?

- **Answer: C) To draw arcs and circles**

- **Explanation:**

A **compass** is used to draw arcs and circles with a specific radius.

5. Which instrument is used to measure and draw angles accurately in engineering drawing?

- **Answer: C) Protractor**

- **Explanation:**

A **protractor** is specifically designed to measure and draw angles accurately.

6. What is the main purpose of a scale in engineering drawing?

- **Answer: C) To scale the drawing accurately**

- **Explanation:**

A **scale** is used to represent the object in the drawing at a reduced or enlarged proportion.

7. Which of the following is used to correct mistakes in a technical drawing?

- **Answer: B) Erasers and correction fluid**

- **Explanation:**

Erasers and **correction fluid** are used to correct mistakes in a technical drawing.

8. What is the function of templates in engineering drawing?

- **Answer: C) To help draw consistent shapes like circles and ellipses**

- **Explanation:**

Templates are used to create consistent shapes, like circles, ellipses, and other standard forms.

9. Which type of pencils are used in engineering drawings for different line weights and details?

- **Answer: A) Drafting Pencils**

- **Explanation:**

Drafting pencils are specially designed for precision in technical drawing, with various grades for different line weights.

10. What material is commonly used for a drawing board to ensure stability in engineering drawing?

- **Answer: C) Wood or a rigid material**

- **Explanation:**

Wood or other **rigid materials** are commonly used to provide a firm, stable surface for drawing.

11. What is the primary use of freehand sketching in engineering design?

- **Answer: B) To visualize designs and brainstorm initial ideas**

- **Explanation:**

Freehand sketching is used to quickly visualize and brainstorm ideas before detailed drawings are made.

12. Which of the following is a major benefit of freehand sketching?

- **Answer: B) It is a flexible, fast way to capture ideas without needing precise instruments**

- **Explanation:**

Freehand sketching is quick and flexible, allowing designers to rapidly capture ideas without precise tools.

13. What is the primary function of lettering in engineering drawings?

- **Answer: B) To label drawings, dimensions, and notes clearly**

- **Explanation:**

Lettering is used in engineering drawings to add clear labels, dimensions, and annotations.

14. Which of the following is an important technique for effective lettering in engineering drawings?

- **Answer: B) Consistent height and style, such as uppercase letters in sans-serif fonts**

- **Explanation:**

Consistent lettering (e.g., uppercase sans-serif fonts) ensures clarity and uniformity in technical drawings.

15. What is the purpose of dimensioning in technical drawings?

- **Answer: B) To provide accurate measurements for the size and location of features**

- **Explanation:**

Dimensioning provides essential measurements for accurately fabricating and assembling parts.

16. Which of the following standards are typically followed in dimensioning to ensure uniformity and clarity?

- **Answer: A) ISO or ANSI standards**

- **Explanation:**

ISO and **ANSI** are standard systems for dimensioning in technical drawings, ensuring consistency and clarity.

17. Why is consistent lettering important in engineering documentation?

- **Answer: B) It ensures clarity and professionalism in the documentation**

- **Explanation:**

Consistent lettering makes the drawing easier to read and maintains professionalism.

18. In engineering, which of the following best describes the role of dimensioning in fabrication and assembly?

- **Answer: B) It is essential for ensuring the correct size and positioning of features during production**

- **Explanation:**

Dimensioning ensures that components are fabricated and assembled with the correct sizes and positions.

19. Which of the following is NOT a benefit of freehand sketching in the early stages of design?

- **Answer: C) It creates precise, final drawings**

- **Explanation:**

Freehand sketching is not intended for precise final drawings; it's a tool for idea generation and concept development.

20. Which of the following would be most appropriate for clear, readable dimensioning on an engineering drawing?

- **Answer: B) Following a standardized system such as ISO or ANSI**

- **Explanation:**

ISO or **ANSI** standards ensure that dimensioning is consistent, clear, and understandable.

21. What is the main purpose of the layout in engineering drawing?

- **Answer: B) To arrange views, dimensions, and notes for clarity and understanding**

- **Explanation:**

The **layout** organizes views and dimensions for

clarity, helping others to understand the design easily.

22. Where is the title block typically located on an engineering drawing?

• **Answer: B) Top center**

• **Explanation:**

The **title block** is usually located at the top center or bottom of the drawing sheet, containing essential details like the drawing title and scale.

23. Which of the following information is included in a title block?

• **Answer: C) Drawing title, designer's name, scale, date, sheet number, and other relevant information**

• **Explanation:**

The **title block** typically contains detailed information such as the drawing title, designer's name, scale, and date.

24. What does chain dimensioning in engineering drawings involve?

- **Answer: B) Measuring from one feature to another in a sequential manner, all with the same datum**

- **Explanation:**

Chain dimensioning measures distances from one feature to another in sequence, using a common datum point.

25. Which of the following is a characteristic of parallel dimensioning?

- **Answer: B) Multiple dimensions are placed parallel to each other with a common baseline**

- **Explanation:**

Parallel dimensioning places dimensions in parallel lines, with a common reference or baseline.

26. What is combined dimensioning in engineering drawings?

- **Answer: B) It is a mix of both chain and parallel dimensioning methods**

- **Explanation:**

Combined dimensioning uses both **chain** and **parallel** dimensioning techniques in the same drawing.

27. In superimposed running dimensioning, where should the origin be indicated?

- **Answer: C) Appropriately, with one end of the dimension line terminated at the origin**

- **Explanation:**

The **origin** in **superimposed running dimensioning** is marked clearly, with the dimension line ending at this point.

28. Which dimensioning method uses a coordinate system to define the position of points relative to a datum?

- **Answer: D) Co-ordinate dimensioning**

- **Explanation:**

Coordinate dimensioning uses a **coordinate**

system (X, Y, Z) to define positions relative to a datum.

29. Which of the following statements is true regarding the title block in an engineering drawing?

• **Answer: C) It includes essential details like the drawing title, designer's name, and scale**

• **Explanation:**

The **title block** includes important details such as the drawing title, designer's name, scale, and other relevant information.

30. Which of the following is a key feature of a well-organized layout in an engineering drawing?

• **Answer: A) It enhances the clarity and facilitates understanding of the drawing**

• **Explanation:**

A well-organized layout ensures the drawing is clear and easy to understand by anyone reviewing it.

31. What is the main purpose of coordinate dimensioning in engineering drawing?

- **Answer: B) To determine the position of points relative to a datum using a coordinate system**
- **Explanation:**
Coordinate dimensioning defines the location of points in a drawing using a coordinate system (X, Y, Z).

32. In coordinate dimensioning, what does the coordinate system use to define positions of points?

- **Answer: B) The X and Y axes relative to a datum**
- **Explanation:**
Coordinate dimensioning uses the X and Y axes relative to a datum to define the position of points.

33. Which quadrant contains both X and Y values as positive in the coordinate plane?

- **Answer: A) First Quadrant**

- **Explanation:**

In the **first quadrant**, both the **X** and **Y** values are positive.

34. Which quadrant has a negative X value and a positive Y value?

- **Answer: B) Second Quadrant**

- **Explanation:**

In the **second quadrant**, the **X** value is negative, and the **Y** value is positive.

35. In which quadrant are both the X and Y values negative?

- **Answer: C) Third Quadrant**

- **Explanation:**

In the **third quadrant**, both the **X** and **Y** values are negative.

36. In which quadrant are X values positive, and Y values negative?

- **Answer: D) Fourth Quadrant**

- **Explanation:**

In the **fourth quadrant**, **X** values are positive, and **Y** values are negative.**Z**

37. In First Angle Projection, how are the views projected onto the planes relative to the viewer?

- **Answer: B) Views are projected onto the planes opposite to the viewer**

- **Explanation:**

In **First Angle Projection**, the views are projected onto planes opposite the viewer

38. Where is the object placed in First Angle Projection?

- **Answer: C) In the first quadrant**

- **Explanation:**

In **First Angle Projection**, the object is placed in the **first quadrant**.

39. In Third Angle Projection, how are the views projected onto the planes relative to the viewer?

- **Answer: B) Views are projected onto the planes adjacent to the viewer**

- **Explanation:**

In **Third Angle Projection**, the views are projected onto the planes adjacent to the viewer.

40. Which projection method is commonly used in the United States and other regions?

- **Answer: B) Third Angle Projection**

- **Explanation:**

Third Angle Projection is the standard in the United States and many other countries.

41. What is the primary purpose of a shop floor drawing in manufacturing?

- **Answer: B) To guide the fabrication and assembly processes with detailed specifications, dimensions, materials, and instructions**

- **Explanation:**

Shop floor drawings provide detailed information for manufacturing, including specifications, materials, and assembly instructions.

42. Which of the following is typically included in a shop floor drawing?

- . Answer: B) Specifications, dimensions, materials, and assembly instructions**

- . Explanation:**

Shop floor drawings typically include all the specifications, dimensions, materials, and assembly instructions.

43. Why is accuracy important in a shop floor drawing?

- . Answer: B) It ensures that machinists and operators can fabricate and assemble the product correctly and consistently**

- . Explanation:**

Accuracy ensures that the product is fabricated and assembled correctly, following the specified dimensions and instructions.

44. How does a shop floor drawing help in communication with shop floor personnel?

- **Answer: B) It provides clear technical information that guides the production process**

- **Explanation:**

Shop floor drawings communicate **clear technical details** to shop floor personnel, aiding fabrication and assembly.

45. In addition to guiding fabrication and assembly, what is another important role of a shop floor drawing?

- **Answer: A) It serves as a reference for quality control and inspection**

- **Explanation:**

Shop floor drawings are also used as a reference for **quality control** to ensure the product meets required standards.

46. Which of the following best describes a shop floor drawing?

- **Answer: B) A detailed technical drawing with production specifications**

- **Explanation:**

A **shop floor drawing** is a **detailed technical** drawing containing production specifications.

47. Who benefits from the use of shop floor drawings in the manufacturing process?

- **Answer: C) Machinists, operators, and quality control inspectors**

- **Explanation:**

Machinists, operators, and quality control inspectors all use shop floor drawings to guide their work.

48. Why is consistency important in shop floor drawings?

- **Answer: C) It helps to prevent errors in fabrication and assembly**

- **Explanation:**

Consistency in shop floor drawings prevents **confusion** and **errors** in the fabrication and assembly process.

49. Which aspect of manufacturing does a shop floor drawing NOT directly assist with?

- **Answer: C) Marketing**

- **Explanation:**

Shop floor drawings are focused on **production**, not marketing or promotional efforts.

50. What is a key reason for including detailed specifications and assembly instructions in a shop floor drawing?

- **Answer: B) To ensure machinists and operators understand how to properly fabricate and assemble the product**

- **Explanation:**

Detailed specifications and assembly instructions ensure the correct **fabrication** and **assembly** of the product.