

- ### SECTION-D
- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Compare and explain the roles and applications of cutting, non-cutting, and integrated dies are used in manufacturing, focusing on their individual benefits and drawbacks.
- Q.37 Discuss the principles underlying the design of press tool elements for drawing operation, considering factors such as drawability, blank holding force, and punch and die design.
- Q.38 Describe the 3-2-1 pin concept of location in jigs and fixtures. Also explain the principles of geometric and dimensional tolerances and their impact on tooling accuracy.

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- Q.6 Design parameters for shearing include:
- Material thickness and strength
  - Cutting clearance
  - Shear angle
  - All of the above
- Q.7 Bending operations are commonly used in the production of:
- Brackets
  - Screws
  - Gears
  - None of the above
- Q.8 What is the primary purpose of presses in press tool operation?
- Cutting materials
  - Bending materials
  - Forming materials
  - Welding materials
- Q.9 Which type of feeding mechanism involves the movement of material along inclined planes?
- Mechanical feeding
  - Gravity feeding
  - Slide feeding
  - Hydraulic feeding
- Q.10 What is the primary goal of estimation methods in tool design and application?
- To increase production inefficiencies
  - To reduce material costs
  - To optimize production processes
  - To complicate manufacturing operations

### SECTION-B

**Note:** Objective type questions. All questions are compulsory.  
(10x1=10)

- Q.11 Press tools are primarily used in mass production to \_\_\_\_\_ sheet materials into desired shapes.
- Q.12 The \_\_\_\_\_ industry extensively relies on sheet material components for various applications in mass production.

- Q.13 Die and punch clearance refers to the space between the \_\_\_\_\_ and the die.
- Q.14 The principle of shearing involves applying \_\_\_\_\_ force to cut through the material.
- Q.15 The construction of non-cutting die involves principles such as bending, drawing, forming, and \_\_\_\_\_.
- Q.16 The selection of shut height in a press is based on material \_\_\_\_\_.
- Q.17 The primary goal of scarp handling equipment is to efficiently remove scrap from the \_\_\_\_\_ area.
- Q.18 The purpose of preparing a bill of material is to estimate \_\_\_\_\_ requirements.
- Q.19 Maintenance of press tools involves performing routine checks and repair to prevent \_\_\_\_\_.
- Q.20 The 3-2-1 pin principle of location ensures accurate and repeatable positioning of work \_\_\_\_\_.

### SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Briefly explain the application of press tool in mass production.
- Q.22 How are sheet material components applied in various industries?
- Q.23 Explain the significance of die and punch clearance in press tool operations.
- Q.24 What is the principle behind shearing operations in press tools?
- Q.25 What does the term "Spring back" refers to in the context of non-cutting dies?
- Q.26 What are three classifications of non-cutting dies? Explain in brief.