

- Q.27 Classify presses based on their constructional features?
 - Q.28 Describe the working principle of a mechanical press.
 - Q.29 What role does material feeding equipment play in press operations?
 - Q.30 Discuss the primary goal of estimation methods in tool design and application.
 - Q.31 What is the primary objective of die maintenance, safety, and storage procedures?
 - Q.32 What are jigs and fixtures, and how are they applied in manufacturing processes?
 - Q.33 What are the differences between jigs and fixtures.
 - Q.34 Explain the concept of limit gauges and their classification.
 - Q.35 How does Taylor's principle influence the determination of maximum and minimum material conditions?

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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**2nd Year / Advance Diploma in Tool and Die Making
Subject:- Tool Design Theory - I (Press Tools, Jigs &
Fixtures)**

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory
(10x1=10)

- Q.1 Which term refers to the concept of shaping sheet materials into desired forms using presses?

 - a) Casting
 - b) Forging
 - c) Stamping
 - d) Extrusion

Q.2 What is the typical function of a press in the mass production process?

 - a) Welding
 - b) Bending
 - c) Painting
 - d) Inspection

Q.3 What is the counterpart of the punch in a punch and die set?

 - a) Blank
 - b) Slug
 - c) Die
 - d) Ram

Q.4 In a punch and die set, what is the purpose of the punch?

 - a) To hold the material in place
 - b) To provide clearance for the die
 - c) To apply force onto the material
 - d) To shape the material

Q.5 What principle guides the construction of non-cutting dies in bending operations?

 - a) Spring back
 - b) Die cushion
 - c) Clearance
 - d) Multi-station

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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:
- | | |
|-------------|----------------------|
| a) Brackets | b) Screws |
| c) Gears | d) None of the above |
- Q.8 What is the primary purpose of presses in press tool operation?
- | | |
|----------------------|----------------------|
| a) Cutting materials | b) Bending materials |
| c) Forming materials | d) Welding materials |
- Q.9 Which type of feeding mechanism involves the movement of material along inclined planes?
- | | |
|-----------------------|----------------------|
| a) Mechanical feeding | b) Gravity feeding |
| c) Slide feeding | d) Hydraulic feeding |
- Q.10 What is the primary goal of estimation methods in tool design and application?
- | |
|---|
| a) To increase production inefficiencies |
| b) To reduce material costs |
| c) To optimize production processes |
| d) 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.

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- 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 scrap 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.

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