

Reg. No.

Question Paper Code

11818

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Sixth Semester

Production Engineering

ME8095 - DESIGN OF JIGS, FIXTURES AND PRESS TOOLS

(Regulations 2017)

(Use of approved design data book is permitted)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks, K-Level, CO</i> |
|--|---------------------------|
| 1. What is fool proofing? | 2,K1,CO1 |
| 2. What are the different types of clamps? | 2,K1,CO1 |
| 3. Write the difference between drill jig and fixtures? | 2,K2,CO3 |
| 4. Mention the application of turning fixtures. | 2,K1,CO3 |
| 5. What is the difference between a progressive die and a compound die? | 2,K1,CO4 |
| 6. Name any four components of a simple press? Mention the broad classification of press operations. | 2,K1,CO4 |
| 7. What is meant by forming? | 2,K1,CO5 |
| 8. List out the main parts of a power press. | 2,K1,CO5 |
| 9. What is meant by poka yoke? | 2,K1,CO6 |
| 10. List down the future technologies in machine tools? | 2,K1,CO6 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) List the different types of clamps and explain any three of them with neat sketches. 13,K2,CO1
- OR**
- b) Write short notes on the following locating elements: 13,K2,CO1
(i) Profile locator (ii) Cylindrical locator (iii) Nest Locator
12. a) Sketch and explain a welding fixture for door frame fabrication. 13,K2,CO3
- OR**
- b) Explain the following with neat sketches: 13,K2,CO3
(i) Milling Fixture (ii) Broaching Fixture

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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13. a) Design a die for 20x20 mm plate with a 5 mm hole in the center. Stock thickness is 0.5mm and the material is mild steel. Take $f_s=120 \text{ N/mm}^2$. 13,K3,CO4

OR

- b) Illustrate with a neat sketch for press working terminology. 13,K2,CO4

14. a) Explain the variables affecting the metal flow in drawing operations. 13,K2,CO5

OR

- b) Explain the following with neat sketches: 13,K2,CO5
(i) Draw beads (ii) Pressure pads (iii) Stripper.

15. a) Write short notes on the following forming process with a neat sketch. 13,K2,CO6
(i) Curling (ii) Bulging (iii) Hole flanging.

OR

- b) Enumerate the latest trends in CNC technology. 13,K2,CO6

PART - C (1 × 15 = 15 Marks)

16. a) How are jigs classified? Explain the constructional details of the post jig with a component of your choice. 15,K3,CO2

OR

- b) Explain the use of the turnover jig with a component of your choice. 15,K3,CO2