

B.Tech. (Sem. - 5th)

JIGS, FIXTURES AND PRESS TOOL DESIGN

SUBJECT CODE : PE - 311

Paper ID : [A0219]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1)

(10 × 2 = 20)

- a) Define process planning.
- b) How sequence of operations is done?
- c) Define jigs and fixtures.
- d) Discuss types of accessories and attachments for presses.
- e) What are various types of die materials?
- f) Describe when a jig and fixture is needed.
- g) Discuss principles of economics in regard to jigs and fixtures.
- h) How press tools are selected?
- i) How jigs are classified?
- j) List design considerations for location devices.

Section - B

(4 × 5 = 20)

- Q2) What are the four essential requirements of clamps and clamping devices?
- Q3) What is ANSI classification of drill bushings and how each classification is used?
- Q4) How was the term fixture derived? What is the major difference between a drill jig and fixture?
- Q5) What is the major difference between precision and commercial die sets?
- Q6) What is drawing operation? What is meant by ironing when discussing drawing operation?

Section - C

(2 × 10 = 20)

- Q7) (a) Determine the proper die clearance for a $\frac{3}{4}$ inch round punch and die that is used on a universal ironworker that will pierce all types and thickness of metal.
- (b) What is double action draw die?
- Q8) (a) What are the major advantages of magnetic and vacuum milling fixtures?
- (b) What is meant by complete location? Explain with help of a suitable example.
- Q9) Write short notes on any two :
- (a) Contents of process planning sheet.
- (b) Assembly fixtures.
- (c) Types of die sets.

