

[Total No. of Questions - 8] [Total No. of Printed Pages - 2]
(2063)

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M.Tech 2nd Semester Examination

JIGS, Fixtures and Die Design

PE-208

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary continuation sheet will be issued.

Note : There are eight questions. Attempt any five. Each question carries equal marks

1. (a) Discuss in detail the principle of jig and fixture design? Mention the uses of jigs and fixtures?
(b) Explain the fixture that uses both mechanical and pneumatic energy for operation?
2. (a) Explain with suitable sketch how a fixture can be used to broach a key way in a gear blank?
(b) Two plates are to be held at right angles to fabricate an L-shaped component by gas welding? Suggest suitable fixture.
3. (a) What is location? Explain the major methods of location?
(b) Write an elaborated not on fool proofing? Draw neat diagram.

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4. (a) What is a die? What are the elements of a die and a punch?
(b) Write notes and draw neatly
 1. Drawing die
 2. Bending die
 3. Progressive die
5. (a) What is modulation design concept? Explain.
(b) Write a note on assembly line fixtures. Draw suitable diagram. Also write about universal jigs and fixtures.
6. (a) Write a note on locating elements and clamping elements? Explain with the help of diagrams.
(b) Explain centralizers and equalizers elaborately.
7. (a) Design, sketch and explain how a broaching fixture can be used for broaching key ways in a flange.
(b) Sketch and explain the turning fixture that can be used for holding non cylindrical components in a lathe for turning.
8. (a) Sketch a simple vice that can be used for clamping work pieces. The fixed jaw moving jaw and guide ways are to be indicated and the part list is to be given.
(b) Explain 3-2-1 locating concept using pins, with suitable sketches. Indicate where the clamping force is to be applied?