

sem-VI / Design of Press Tool
& Metal Joining

Paod (CBGS)
16-05-16

QP Code : 608800

(3 Hours)

[Total Marks : 80



- N.B.:** (1) Question number 1 is compulsory.
(2) Attempt **any three** questions from remaining **five**
(3) **Assume** suitable data if required and justify it.

1. (a) The part shown in figure 1(a) is to be produced on progressive die.
(i) Calculate economic strip layout. Consider sheet size 1000 mm long x 500 mm wide. Material: Brass **5**
(ii) Calculate Centre of pressure for the component. **5**

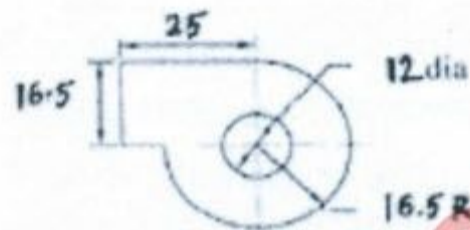


Figure 1(a)

- (b) How bad welding is differentiated from good welding? What are the heat effects of welding on parent material? **5**
(c) Explain Bending with neat sketch. Define different terms and parameters in bending. **5**
2. (a) Explain the following in press working with suitable sketches: **10**
(i) Methods to reduce cutting forces during shearing action
(ii) The clearance between punch and die.
(b) Describe Oxy-Acetylene gas welding and its chemistry. **5**
(c) How the bending operation is differ from drawing operation? Explain the advantage of rotary bending with neat sketch. **5**
3. (a) Explain the step by step procedure for computation of press capacities and tonnage requirements for cutting and drawing operations. **15**

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- (b) Gas metal arc welding the preferred over shielded metal arc welding. State TRUE or FALSE and Justify it. 5
4. (a) Make a neat sketch of assembly of blanking die with showing the components available in that assembly. Also prepare a table to represent functions and material used of any four components. 10
- (b) Explain: Consideration of grain direction for component involving bending. 5
- (c) Explain the defects in welding. 5
5. (a) What is the purpose of weldability testing? Explain classification of weldability testing. Discuss weldability of Aluminum and its alloy. 10
- (b) What are the causes of wrinkling in deep drawn parts and explain the role of blank holding pressure in this context. 5
- (c) Differentiate between the following (any one) 5
- (i) Direct and indirect piloting (ii) Coining and embossing
6. (a) What is spring back effect in bending? Explain methods to reduce spring back effect 10
- (b) What materials are suitable for welding, soldering and brazing process? How are thermal stresses evolved in welding. 5
- (c) Hydraulic press is required over a mechanical press for deep drawing operation. Explain. 5
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