

# 17622

21415

3 Hours / 100 Marks

Seat No.

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- Instructions :** (1) All Questions are *compulsory*.  
(2) Answer each next main Question on a new page.  
(3) Illustrate your answers with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) Assume suitable data, if necessary.  
(6) Use of Non-Programmable Electronic Pocket Calculator is permissible.  
(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE of the following :**

**20**

- Explain various stages involved in basic shearing process.
- Explain the construction of Nibbling m/c with sketch.
- Explain the procedure for lightening and extinguish the cutting torch in flame cutting.
- Differentiate between folding and bending.
- List two advantages and two disadvantages of fly press over power press.
- What is pre-forming in rolling operation and state its need.
- What are high strength friction grip bolts ?

**2. Attempt any TWO of the following :**

**16**

- Explain the following with neat sketch (i) POP rivet (ii) Bifurcated rivet.
- Distinguish between riveting and bolting with respect to (i) Cost (ii) Reliability (iii) Labour skills (iv) Joint strength
- Explain angle ring bending rolls with neat sketch.

**P.T.O.**

- 3. Attempt any TWO of the following : 16**
- (a) Explain construction and working of guillotine machine with neat sketch.
  - (b) Explain with sketch cropping and notching operation in shearing machine.
  - (c) What is metal sawing operations ? Write safety precaution for reciprocating power hacksaw.
- 4. Attempt any TWO of the following : 16**
- (a) Explain with neat sketch the use of an attachment in hand flame cutting to ensure a steady rate of cut along straight line.
  - (b) With neat sketches explain the procedure for defective rivet removal.
  - (c) Explain with neat sketch bending operation on press brake.
- 5. Attempt any TWO of the following : 16**
- (a) Explain spring back in metal, related to bending operation with a neat sketch.
  - (b) Explain Edge bending method with neat sketch. Also state the important point to be considered during bending operation.
  - (c) Explain the working of inclined shaft rotary shearing m/c and state 2 advantages.
- 6. Attempt any FOUR of the following : 16**
- (a) Explain with neat sketch, load indicating bolt head and washer.
  - (b) List the steps in folding a sheet metal job.
  - (c) What is the difference between blanking and piercing operations ?
  - (d) Differentiate between reciprocating power hacksaw and bench saw with respect to (i) cost of the machine (ii) sawing time (iii) labour skill.
  - (e) With neat sketches explain the technique of cutting thick plate away from the edge.
  - (f) Explain the importance of clearance and rake angle of blade in shearing.
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