

17622

21819

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.

Marks

1. **Attempt any FIVE of the following :** **20**
 - (a) What are the safety precautions during shearing ?
 - (b) Explain the importance of clearance and rack angle of blade in shearing.
 - (c) Give the advantages of rotary shearing machine.
 - (d) What is pre-forming in rolling operation and state its need.
 - (e) Explain the construction of Nibbling machine with neat sketch.
 - (f) Give the working of punch type nibbler.
 - (g) Give any two advantages and disadvantages of reciprocating power hacksaw.

2. **Attempt any TWO of the following :** **16**
 - (a) Explain with neat sketch cropping and notching operation in shearing machine.
 - (b) Explain the working of bench shearing machine.
 - (c) Explain angle ring bending rolls with neat sketch.

3. **Attempt any TWO of the following :** **16**
 - (a) Explain the following with a neat sketch :
 - (i) POP rivet
 - (ii) Bifurcated rivet

- (b) Distinguish between riveting and bolting with respect to
 - (i) Cost
 - (ii) Reliability
 - (iii) Labour skills
 - (iv) Joint strength
 - (c) Explain Edge bending method with neat sketch. Also state the important point to be considered during bending operation.
- 4. Attempt any TWO of the following : 16**
- (a) Explain spring back in metal, related to bending operation with a neat sketch.
 - (b) State the methods used for tensioning HSFG bolts. Explain any one.
 - (c) Explain with neat sketch bending operation on press brake.
- 5. Attempt any TWO of the following : 16**
- (a) Explain with neat sketch the use of attachment in hand flame cutting to ensure a steady rate of cut along a straight line.
 - (b) Define Bending. List basic bending methods. Give the steps in folding a sheet metal job.
 - (c) Describe the process of removal of defective weld by gouging.
- 6. Attempt any FOUR of the following : 16**
- (a) Describe circular metal sawing m/c.
 - (b) Differentiate between reciprocating power hacksaw and bench saw with respect to
 - (i) Cost of the machine
 - (ii) Sawing time
 - (iii) Labour skill
 - (c) Enlist the flame cutting equipments.
 - (d) What are the factors influencing the quality of cut ?
 - (e) Give any two advantages and disadvantages of power press.
 - (f) What is the difference between blanking and piercing operations ?
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