

17622

11819

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.
  - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

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| <b>1. Attempt any FIVE :</b>  | <b>20</b>    |
| (a) Explain importance of 'Rake angle of blades' and 'Clearance between cutting edges' in shearing operation.   |              |
| (b) Discuss factors influencing quality of cut in flame cutting.  |              |
| (c) What is gouging ? State its use.  |              |
| (d) What is pre-forming in rolling operation ? Why is it required ?   |              |
| (e) State advantages and limitations of power press.  |              |
| (f) Differentiate between blanking and piercing operation.  |              |
| (g) Compare hand rivetting & power rivetting.   |              |
| <b>2. Attempt any TWO :</b>   | <b>16</b>    |
| (a) Explain construction & working of treadle guillotine machine.   |              |
| (b) Write essential features of rotary shearing machines. Explain Incline shaft machine & write its advantages. |              |
| (c) Explain cropping and notching operations with sketch.   |              |

- 3. Attempt any TWO :** **16**
- (a) Explain any one type of portable Nibbler & write various operations possible on it.
  - (b) Sketch & explain circular metal saw & write its advantages.
  - (c) Explain following techniques in flame cutting :
    - (i) Cutting thick plates
    - (ii) Cutting a round bar
- 4. Attempt any TWO :** **16**
- (a) Write procedure for following in flame cutting :
    - (i) Lightening a cutting torch
    - (ii) Flame adjustment
    - (iii) Extinguish the flame
  - (b) What is 'Spring back' in bending ? Explain methods of compensating spring back with sketches.
  - (c) Write specifications of folding machines. Explain the use of angle clamping blade in a folding machine.
- 5. Attempt any TWO :** **16**
- (a) Explain following with reference to press brake :
    - (i) Die ratio & its significance
    - (ii) Mechanical v/s hydraulic press brake
  - (b) Explain the following with neat sketch & write its applications :
    - (i) POP rivet (ii) Tubular rivet
    - (iii) Bifurcated rivet (iv) Blind rivet
  - (c) Explain 'Torque Control Method' used for tensioning HSFG bolts. What are its advantages ?
- 6. Attempt any FOUR :** **16**
- (a) Write safety precautions to be observed while using guillotine machines.
  - (b) State advantages & disadvantages of reciprocating power hacksaw.
  - (c) Explain pipe bending operation in brief. How wrinkling is minimised in pipe bending ?
  - (d) Differentiate between folding and bending.
  - (e) Explain bending rolls with neat sketch.
  - (f) List equipments used for rivetting. Explain allowances for rivetting.
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