

17622

15162

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) Use of Non-Programmable Electronic Pocket Calculator is permissible.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) **Attempt any THREE :** **12**
- (a) Define (i) Shear angle (ii) Rake angle. Also state basic principles of shearing.
(b) What are the types of rotary shears ? State the advantages of rotary shearing machine.
(c) Compare cropping and notching operation.
(d) What are the safety precautions to be taken during hand sawing operation ?
- (B) **Attempt any ONE :** **6**
- (a) Explain the procedure for lightening the cutting torch. Also state the applications of flame cutting by hand.
(b) List the methods of compensating for spring back and explain any one.
2. **Attempt any TWO :** **16**
- (a) Define die ratio. Write the dimensional specification of a press brake. Also state advantages and disadvantages of power press.
(b) Draw a basic arrangements of rolls. Explain cone rolling attachment.
(c) Enlist the methods of tensioning HSFG bolts. Explain how torque is controlled by power driven wrench.

- 3. Attempt any TWO :** **16**
- (a) Explain construction and working of Treadle guillotine machine. What are the safety precautions to be taken during operation ?
 - (b) (i) Compare Flame cutting and shearing.
(ii) How removal of defective weld is take place by gouging ?
 - (c) Write the importance of neutral line. State the applications of bending allowances. What are the steps in folding ?
- 4. (A) Attempt any THREE :** **12**
- (a) What are the factors influencing quality of cut ?
 - (b) Distinguish between folding and bending.
 - (c) Draw a labelled sketch of universal steel shearing machine.
 - (d) Write the advantages and disadvantages of reciprocating power hacksaw.
- (B) Attempt any ONE :** **6**
- (a) Explain the technique of cutting a round bar.
 - (b) What are the various types of folding machines ? Explain with examples of work produced in a folding machine.
- 5. Attempt any TWO :** **16**
- (a) What are the methods of riveting ? Explain power riveting method. Also state the allowances used for riveting.
 - (b) (i) Define (1) Blanking (2) Piercing operations.
How much pressure is required to operate blanking operation ?
(ii) Compare mechanical and hydraulic press brakes.
 - (c) Explain construction and working of shear type machine. Also state the advantages of nibblers.
- 6. Attempt any FOUR :** **16**
- (a) Compare parallel shaft machine and inclined shaft machine.
 - (b) Explain working of circular metal saw with sketch.
 - (c) With neat sketch explain pyramid type rolling machine.
 - (d) What are the common forms of rivets ? Draw neat sketches of two forms.
 - (e) Distinguish between bolting and riveting. (Any four points)
 - (f) What are the factors to be considered during setting of the guillotine ?
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