

17622

16172

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

- (a) What is metal sawing operation ?
- (b) What do you mean by HSFG bolt ? Explain in brief.
- (c) Explain the importance of shearing angle and rack angle of blade in shearing operation.
- (d) Explain cropping and notching operation.
- (e) Explain roll bending operation with neat sketch.
- (f) Explain the construction and working of fly press.
- (g) Explain spring back and its effects in bending operation.

2. Attempt any TWO of the following :**16**

- (a) Give the constructional differences in pinch type roll and pyramid type roll.
- (b) With neat labelled sketch, explain hand riveting methods.
- (c)
 - (i) Explain with neat sketch, load indicating bolt head and washer.
 - (ii) Draw a sketch of pop rivet and blind rivet.

3. Attempt any TWO of the following :**16**

- (a) Differentiate between reciprocating power hacksaw and circular metal saw with respect to (i) cost (ii) saving time (iii) skill labour (iv) quality of product.
- (b) Explain the basic principle and application of flame cutting operation. Also state the type of fuel gases used.
- (c) Enlist the type of folding machine and explain steps in folding.

4. Attempt any TWO of the following :**16**

- (a) Explain the importance of neutral line in bending sheet metal and state the application of bending allowances.
- (b) Define Die ratio and compare mechanical and hydraulic press brake.
- (c) Explain the following :
 - (i) Procedure for lightening the cutting torch.
 - (ii) Procedure for adjustment for flame.
 - (iii) Procedure for extinguish the flame.

5. Attempt any TWO of the following :**16**

- (a) Explain the steps in setting the guillotine machine and the safety precaution during the operation.
- (b) Explain construction and working of incline shaft rotary shearing machine with sketch.
- (c) Explain construction and working of punch type shear machine. Also advantages over shear type shearing machine.

6. Attempt any FOUR of the following :**16**

- (a) Explain any two operations carried out on universal steel shearing machine.
 - (b) With neat sketches explain the procedure for defective rivet removal.
 - (c) State the factors influence on quality of flame cutting.
 - (d) Differentiate between folding and bending.
 - (e) Explain blanking pressure and blanking operation.
 - (f) Differentiate between bolting and riveting.
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