17456

14115

3 Hours / 100 Marks **Seat No.** | | | | | | | | |

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.

(8) Write any special instructions if any. Diagrams should be self explanatory.

Marks

1. Attempt any TEN : **20**

(i) What is 'Quantity' ?

(ii) What are 'Standards' ?

(iii) List some tools sued in marking.

(iv) What is the need for 'witness marks' in marking ?

(v) Draw a neat labelled sketch, showing shop method for drawing a circle.

(vi) Explain only the method to determine pitch between bolts for a flange whose bolt circle diameter = 800 mm and number of bolts = 08.

(vii) List some instruments for datum measurements.

(viii) Define straightness.

(ix) List any two needs in the use of templates.

(x) Define flatness.

(xi) Draw a neat labelled sketch on any one method for manual straightening.

(xii) List any two reasons for stiffening in fabrication.

(xiii) Draw a neat labelled sketch on any one method for machine straightening.

(xiv) What is the need for surface cleaning prior to coating ?

(xv) List the types of layouts. Which is more suitable for the fabrication of pressure vessels.

2. Attempt any FOUR : **16**

(i) Explain any one marking method with neat labelled sketches for large size plates.

(ii) Draw a neat labelled sketch, showing the use of tensioned wire method.

(iii) List any four comparative differences between the use of direct marking and template methods.

(iv) Explain the need for web stiffeners with neat labelled sketches.

(v) Differentiate between alloys and composites. Classify the composites.

(vi) Explain any one mechanical method of surface cleaning.

3. Attempt any FOUR : **16**

(i) Explain the use of chalk line for marking long straight lines with neat labelled sketch.

(ii) Explain the diametral method for roundness measurement with neat labelled sketch.

(iii) List the important information to be provided on templates.

(iv) Explain principle of hot shrinking with neat labelled sketches.

(v) Explain any one method of stiffening sheet metals with neat labelled sketches.

(vi) List and elaborate, for the factors influencing a layout.

4. Attempt any FOUR : 16

(i) Explain the procedure only for marking out brackets from a datum surface.

(ii) Explain templates as a means for checking with neat labelled sketches.

(iii) Explain the method of stiffening large panels with neat labelled sketches.

(iv) Explain any one method of processing composites with neat labelled sketches.

(v) Explain need for surface coating of materials. Explain heat/flame method for surface cleaning.

(vi) List objectives to be achieved through an efficient factory layout.

5. Attempt any FOUR : 16

(i) Explain with neat labelled sketch any one straight edge method for straightness testing.

(ii) Explain use of templates to provide an economical arrangement of layout for press work with neat labelled sketches.

(iii) Differentiate between the use of heat triangles and triangles of heat strips with neat sketches.

(iv) List any four comparative differences between thermosetting and thermoplastic resins.

(v) Explain pickling and etching.

(vi) ‘A good layout improves productivity.’ Explain.

6. Attempt any FOUR : **16**

(i) Explain precision and accuracy with neat labelled sketches.

(ii) List any four comparative differences between line and end standards.

(iii) Explain procedure for marking of holes in angle sections with neat sketches.

(iv) What is plant layout dynamics ? Explain.

(v) Explain any one application of web stiffeners with neat sketches.

(vi) Explain any one dry process for surface cleaning.

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