



17456

11819

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.*
 - (8) *Use of Steam tables, logarithmic, Mollier's chart is **permitted**.*

Marks

1. Attempt any ten :

20

- 1) What do you mean by sensitivity ?
- 2) Explain importance of line standards in measuring and marking operations.
- 3) State any two applications of engineer's rule.
- 4) What do you mean by calibration ?
- 5) Define the terms :
 - a) Precision
 - b) Accuracy
- 6) Define the terms :
 - a) Straightness
 - b) Flatness
- 7) List materials used for making of templates.
- 8) Define a 'standard'.
- 9) Compare manual and machine straightening wrt :
 - a) Quality
 - b) Cost of labour
- 10) What is the difference between heat straightening and curving ?
- 11) List reasons for a stiffening operation on sheet metal products.
- 12) What is a composite material ? Are metal alloys also termed as composite materials ?
- 13) List applications of composites in :
 - a) Sports industry
 - b) Fabrication industry.
- 14) Explain the need for surface coating on metals.
- 15) Classify the types of layouts.

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- 2. Attempt any two :** **16**
- 1) Explain the method of using chalk line for marking long straight line.
 - 2) Differentiate between the use of heat triangles and triangles of heat strips.
 - 3) What are web stiffeners ? Explain their needs.
- 3. Attempt any two :** **16**
- 1) Explain any one method for marking out large size plates.
 - 2) Explain the shop method for drawing a circle.
 - 3) Explain any one method for straightness testing using a straight edge ?
- 4. Attempt any two :** **16**
- 1) Explain any one method for processing of composites.
 - 2) Explain any one chemical method for surface cleaning.
 - 3) List essentials for a workshop layout manufacturing grills.
- 5. Attempt any four :** **16**
- 1) Draw a neat labelled sketch, illustrating the use of plumb line for vertical datum measurement.
 - 2) Draw a neat labelled sketch, illustrating the use of spirit level for horizontal datum measurement.
 - 3) Explain the difference in ordinary and bushed steel templates.
 - 4) Explain the principle of stiffening.
 - 5) Explain the need for surface cleaning. What is thermal method of surface cleaning ?
 - 6) Explain the statement 'A good layout improves productivity'.
- 6. Attempt any four :** **16**
- 1) Explain the method for plotting ellipse using trammels.
 - 2) Explain the method of roundness measurement on a V-block.
 - 3) List the informations given on templates.
 - 4) Explain the different methods of stiffening sheet metals.
 - 5) Explain any one mechanical method of surface cleaning.
 - 6) Explain the term 'Dynamics of plant layout'.
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