



17542

15162

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

Marks

1. A) Attempt **any three** : **12**
- a) List out any four problems of traditional industries.
 - b) State magnetostriction effect.
 - c) Compare longitudinal and circular magnetization (any four points).
 - d) List any four types of heating techniques with one suitable application of each.
- B) Attempt **any one** : **6**
- a) Draw and explain the basic set up of EDM.
 - b) List the applications of dielectric heating and explain any one. State the advantages of dielectric heating.
2. Attempt **any four** : **16**
- a) List advantages of modern industry over traditional industry.
 - b) What is NDT ? List the different methods of NDT.
 - c) Explain through transmission method of ultrasonic flaw detection with appropriate diagram.
 - d) Describe the principle of magnetic particle testing.
 - e) State the principle of EDM with the help of schematic diagram.
 - f) State and describe principle of induction heating.
3. Attempt **any four** : **16**
- a) Write causes of accident (four points).
 - b) Describe the process of cold welding using ultrasonic.
 - c) Describe the pulse echo method of ultrasonic flaw detection with the help of neat block diagram.
 - d) Explain the need of demagnetization in magnetic crack detection.
 - e) Draw and explain the block diagram of CNC machine.

P.T.O.

**4. A) Attempt any three :****12**

- a) List any four feature of modern industry.
- b) Explain ultrasonic level measurement.
- c) State four properties of dielectric fluid used in EDM.
- d) How surface hardening of steel is carried out using induction heating ?

B) Attempt any one :**6**

- a) What is part programming ? Explain manual part programming.
- b) Compare induction heating and dielectric heating (any six points).

5. Attempt any four :**16**

- a) Give the classification of NC system.
- b) Name sequential steps involved in liquid penetrant testing.
- c) How non-destructive testing is carried out using coil-shot method ?
- d) Describe the technique used for recording results in MPT.
- e) What is DNC ? Write advantages and disadvantages of DNC.
- f) Draw and explain block diagram of dielectric heating.

6. Attempt any four :**16**

- a) Draw the block diagram and explain electronic-acoustic method.
 - b) Describe magnetostrictive generation of ultrasonic with neat circuit diagram.
 - c) Describe wet method of MPT.
 - d) List applications of EDM and explain any one.
 - e) Describe absolute and incremental NC system.
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