

# 17542

**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) 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) State the advantages of modern industry.
  - b) What is NDT? List the different methods of NDT.
  - c) What is circular magnetisation? State its principle.
  - d) State the principle of EDM. Draw basic set up of EDM.
  - e) Draw and describe wire cut EDM.
  - f) List advantages of CNC machines. (any six)
  - g) List applications of dielectric heating and induction heating.  
(four each)

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) What is the role of electronics in modern industry?
  - b) State two advantages and two limitations of ultrasonic testing.
  - c) Describe the prod magnetisation testing method with neat sketch.
  - d) State the properties of dielectric fluid used in EDM. (any six)
  - e) What is DNC? State it's two demerits.
  - f) Describe the surface hardening of steel using induction heating.
- 3. Attempt any TWO of the following:** **16**
- a) What are the different methods of US generation. Describe any one electrical method in detail.
  - b) Describe wet method and dry method used in magnetic crack detection. Describe transparent plastic tape recording technique.
  - c) What is meant by NC, CNC, DNC, CIM. Describe all NC words.
- 4. Attempt any FOUR of the following:** **16**
- a) Write any four causes of accidents, and types of accidents.
  - b) Describe US cleaning and it's two advantages.
  - c) Describe any two types of circular magnetisation.
  - d) State the role of servomotor, high pressure pump, filter and dc supply in EDM.
  - e) List the different i/p media used for NC. Explain any one.
  - f) What is microwave heating? Give two applications of it.

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

- a) State any two problems in traditional industry. How these problems overcome in modern industry.
- b) List different types of probes used in UFD. Explain any one probe.
- c) Compare longitudinal and circular magnetisation. (four points)
- d) Describe classification of NC system.
- e) Describe any four advantages of CNC machines.
- f) Describe dielectric heating with neat diagram.

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

- a) List any four features of modern industry.
  - b) Describe US cold welding.
  - c) What is the necessity of demagnetisation?
  - d) Compare induction heating and dielectric heating (four points)
  - e) Draw the oscillator used in induction heating system. State its frequency range.
  - f) State four losses taking place in dielectric heating.
-