



17542

16117

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions :** (1) *All questions are compulsory.*
(2) *Illustrate your answers with neat sketches wherever necessary.*
(3) *Figures to the right indicate full marks.*
(4) *Assume suitable data, if necessary.*

	Marks
1. A) Attempt any three :	12
a) What is industrial safety ? List out industrial safety related standard.	4
b) Name different types of probes used in ultrasonic flaw detection. State material used.	4
c) Explain incremental and absolute system.	4
d) How surface hardening of steel is carried out using induction heating ?	4
B) Attempt any one :	6
a) Compare dry method and wet method of MPT.	6
b) Describe basic principle of EDM with EDM set up.	6
2. Attempt any four :	16
a) What is the role of electronics in modern industry ?	4
b) Explain the process of cold welding using ultrasound.	4
c) Explain the principle of MPT.	4
d) List out any four applications of EDM.	4
e) What is the dielectric heating ? Explain with a neat diagram.	4
f) State the principle of IR heating.	4
3. Attempt any four :	16
a) What are the problems in traditional industries ? How are these overcome in modern industries ?	4
b) Describe with neat diagram magna-flux method.	4
c) State essential functions of spark generator in EDM set up.	4
d) What are the limitations of manual part programming ?	4
e) Comparison between induction heating and dielectric heating.	4

P.T.O.

**Marks**

- | | |
|--|-----------|
| 4. A) Attempt any three : | 12 |
| a) Give features of modern industry. | 4 |
| b) Draw neat block diagram of ultrasonic flaw detector with echo pulse wave form in CRO. | 4 |
| c) Explain the principle of induction heating with a neat diagram. | 4 |
| d) State magnetostriction effect. State application of it. | 4 |
| B) Attempt any one : | 6 |
| a) Describe circular and longitudinal magnetization method with neat diagram. | 6 |
| b) Draw the block diagram of CNC and describe the function of each block. | 6 |
| 5. Attempt any four : | 16 |
| a) Describe measures of accident preventions. | 4 |
| b) Draw the transistorized circuit diagram of Piezoelectric effect for ultrasonic generation. Explain its working. | 4 |
| c) State advantages and disadvantages of MPT. | 4 |
| d) Explain the functions of following in EDM : | 4 |
| 1) Servo motor 2) Dielectric fluid. | |
| e) What is microwave heating ? Give two applications of it. | 4 |
| f) What is DNC and CIM system ? List four factors for selection of components for CNC machining. | 4 |
| 6. Attempt any four : | 16 |
| a) State working principle of liquid penetration and eddy current method of NDT and explain. | 4 |
| b) List and describe the technique used for recording results. | 4 |
| c) Explain the ISO codes of programming used in NC/CNC. | 4 |
| d) Name four non-traditional machining. State its importance in industry. | 4 |
| e) List properties of ultrasonic waves. | 4 |
-