

17542

11920

3 Hours / 100 Marks

Seat No.

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- 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. Attempt any FIVE of the following :** **20**
 - (a) State four advantages of modern industry.
 - (b) Define NDT and list the different types of NDT.
 - (c) State the principle of EDM.
 - (d) List four advantages of CNC machines.
 - (e) Define Industrial safety. List out industry safety related standard.
 - (f) State any four problems faced in traditional industry and give two examples of traditional industry.
 - (g) State six causes of accident.

- 2. Attempt any FOUR of the following :** **16**
 - (a) State two advantages and two limitations of ultrasonic testing.
 - (b) State three properties of dielectric fluid used in EDM and list two examples of dielectric fluid.
 - (c) Describe the probe magnetisation testing method with neat sketch.
 - (d) Explain DNC and state its two demerits.
 - (e) Describe the surface hardening of steel using induction heating.
 - (f) State the types of accidents and mention two accident preventions to be followed.

- 3. Attempt any TWO of the following : 16**
- (a) State the different methods of ultrasonic generation. Describe any one electrical method in detail with diagram.
 - (b) Describe wet method and dry method used in magnetic crack detection. State four applications of magnetic crack detection.
 - (c) Define part programmng and describe all the NC words used in manual part programming.
- 4. Attempt any FOUR of the following : 16**
- (a) Define microwave heating and mention two applications of it.
 - (b) Describe with neat diagram magna-flux method.
 - (c) Explain the process of cold welding using ultrasonics.
 - (d) List out four applications of EDM.
 - (e) List the different i/p media used for NC. Explain any one.
 - (f) Compare NC and CNC. (any 4 points)
- 5. Attempt any FOUR of the following : 16**
- (a) List different types of probes used in UFD. Explain any one probe.
 - (b) Compare longitudinal and circular magnetisation (any four points).
 - (c) State advantages and disadvantages of dielectric heating.
 - (d) Draw and explain the block diagram of CNC machine.
 - (e) Draw and explain the principle of induction heating.
 - (f) Draw and explain the basic setup of EDM.
- 6. Attempt any FOUR of the following : 16**
- (a) Compare induction heating and dielectric heating. (any 4 points)
 - (b) State the necessity of demagnetisation used in MPT and the methods of demagnetisation.
 - (c) Describe the pulse echo method of UFD with the help of a neat block diagram.
 - (d) Describe absolute and increamental NC system.
 - (e) State the losses taking place in dielectric heating process.
 - (f) List the applications of dielectric heating and explain any one.
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