17542

21415

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) Enlist any four problems of traditional industries. State four advantages of modern industry.
   b) Mention the steps for accident prevention (any 4 points).
   c) Define industrial safety and state safety procedures to be followed in the industries.
   d) What is NDT ? List the different methods of NDT.

   B) Attempt **any one** : **6**
   a) Draw the neat diagram of basic set up of EDM. Describe its operation.
   b) Compare dielectric heating and induction heating.

2. Attempt **any four** : **16**
   a) What is intrinsic safety ? State its importance and list its standard.
   b) State two advantages and two disadvantages of EDM.
   c) Describe the process of cold welding using ultrasonic.
   d) Describe wet method and dry method used in MPT.
   e) Explain the various probes used in UFD.
   f) Draw the block diagram of CNC machine and explain each block.

3. Attempt **any four** : **16**
   a) State the properties of dielectric fluid used in EDM.
   b) Describe the necessity of removing residual magnetic field in MPT. List two methods of demagnetisation.

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MARKS

c) State piezoelectric effect and write any four materials which exhibit property.

d) State any four criteria to select the component for CNC machine.

e) List the different methods of magnetisation. Explain in detail the longitudinal magnetisation method.

f) Explain the principle of dielectric heating with block diagram.

4. Attempt **any two** : **16**

a) Draw a neat block diagram of ultrasonic flow detector using pulse echo method. Describe its operation.

b) Draw and explain the circuit of high frequency power source used for induction heating.

c) Draw a neat diagram of wire cut EDM. Describe its operation. State the various types of electrodes used in EDM.

5. Attempt **any four** : **16**

a) Explain the working principle of magnetic particle testing.

b) Explain the following terms NC, CNC, DNC and CIM.

c) Explain the recording techniques used in magnetic crack detection.

d) Draw and explain ultrasonic level measurement method.

e) Explain absolute and incremental system used in CNC machines.

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

a) What is part programming ? Explain the use of G and M codes in details.

b) State the various losses taking place in dielectric heating process.

c) Describe with neat diagram of prod magnetisation method.

d) State the advantages and applications of ultrasonic testing.

B) Attempt **any one** : **6**

a) State the concept and advantages of computer aided part programming.

b) List the different methods of magnetisation. State any four advantages and disadvantages of MPT.
