

22491

23124

3 Hours / 70 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) Assume suitable data, if necessary.
- (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following :** **10**
- Define core and cavity.
 - State the significance of Guide pillar and guide bush.
 - State any four properties of mild steel.
 - Write any two properties and an application of P-20 steel.
 - Define nonferrous metal give any two examples.
 - Enlist different tool steels used for making molds.
 - Enlist any four operations that can be performed on lathe machine.

P.T.O.

- 2. Attempt any FOUR of the following :** **12**
- a) Explain the steps involved CNC machining.
 - b) State the principle and working of milling machine.
 - c) Explain the working of jig boring machine.
 - d) Describe annealing process. State its application.
 - e) Explain the method of Emery polishing.
- 3. Attempt any FOUR of the following :** **12**
- a) Describe hardening process. State its applications.
 - b) Explain the steps involved in Bench fitting of Injecting mold.
 - c) Describe the process of Indirect bolting method used for injection mold clamping.
 - d) Explain the criterion used for selection of material for Injection mold cavity.
 - e) Describe the procedure of determine hardness by Rockwell hardness tester.
- 4. Attempt any THREE of the following :** **12**
- a) Explain different types of bolsters used in injection mold with suitable diagram.
 - b) Write applications of mild steel and alloy steel in Injection mold.
 - c) State the advantages and disadvantages of modern machining over conventional machining.
 - d) Explain the principle of operation of surface grinding machine.
 - e) Explain the principle and working of Power Saw.

- 5. Attempt any THREE of the following :** **12**
- a) Write properties and applications of EN-9.
 - b) Explain the inspection procedure for any two mold component.
 - c) Describe the EDM spark erosion machining for manufacturing cavity.
 - d) Explain the concept of CNC machining.
 - e) Explain the selection of Alloy Steel based on its composition for core.
- 6. Attempt any TWO of the following :** **12**
- a) Draw and explain fixed half and moving half of an injections mold.
 - b) Explain the construction and working of machine used for manufacturing circular core and cavity inserts with suitable diagram.
 - c) Enlist the tools used for finishing cavity and explain the process of Diamond Polishing used for mold cavity.
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