

22456

11920

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

- (a) Define core and cavity.
- (b) State any two important properties of mild steel.
- (c) State any two properties of beryllium.
- (d) State any four parts of a lathe machine.
- (e) State any two functions of a milling machine.
- (f) State the necessity of heat treatment.
- (g) Draw a neat labelled diagram of direct bolting method.

2. Attempt any THREE of the following :

12

- (a) State the types of runner cross-sections with neat diagrams.
- (b) Write down any four properties and applications of mould steel.
- (c) Describe the working of a cylindrical grinding machine.
- (d) Suggest a name of the machine for making a 10 mm hole in a core plate in a compression mould. Write its working principle.

- 3. Attempt any THREE of the following : 12**
- (a) With a neat labelled diagram state the functions of a guide pillar and a guide bush.
 - (b) Write any four properties and applications of sheet metal.
 - (c) Suggest a machine used for facing operation. Write its working principle.
 - (d) Explain the indirect bolting method in case of attachment of mould to platen.
- 4. Attempt any THREE of the following : 12**
- (a) Suggest with justification material for making a register ring and sprue bush.
 - (b) Explain the working principle of EDM and state its use in mould making.
 - (c) Explain the process of diffusion coating.
 - (d) Suggest a method for smoothing the cavity and core parts in an injection mould. Explain the methods.
 - (e) State any four mould components and their functions.
- 5. Attempt any TWO of the following : 12**
- (a) List out any three important properties and three applications of copper and aluminium as a moulding material.
 - (b) Explain any two operations performed by a jig boring machine with a labelled sketch.
 - (c) Suggest and describe the plating method for matt like finish for a cavity.
- 6. Attempt any TWO of the following : 12**
- (a) Describe the type of bolster for a rectangular core/cavity with a labelled sketch.
 - (b) Explain the steps involved in CNC machining.
 - (c) State the need, process and specific application of nitriding in mould making.
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