

**16117****3 Hours / 100 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. (A) Answer any THREE of the following :****12**

(a) Define cavity and core in an injection mould.

(b) What is a runner ? State its four types.

(c) Explain selection criteria of split mould.

(d) Draw a labelled diagram of an injection mould for an external threaded component.

**(B) Answer any ONE of the following :****06**

(a) Draw a labelled diagram of semi-positive type of compression mould and explain its working.

(b) Differentiate between two plate and three plate moulds.

**2. Answer any TWO of the following : 16**

- (a) With labelled diagrams, explain the construction of tunnel gate and ring gate.
- (b) What is a split mould ? Explain finger cam and dog-leg cam actuation-methods with diagrams.
- (c) Explain the construction and working of side core and side cavity with labelled diagrams.

**3. Answer any FOUR of the following : 16**

- (a) Draw a labelled diagram for mould of internally threaded component.
- (b) Explain the pitch circle layout system with a diagram.
- (c) Explain positive type of compression mould with a labelled diagram.
- (d) What is the necessity of a three plate mould ?
- (e) Explain different design aspects of three plate mould.

**4. (A) Answer any THREE of the following : 12**

- (a) With a labelled diagram, explain the working of integral pot type transfer mould.
- (b) Explain multicavity mould with different gating systems.
- (c) Describe the construction of flash type of compression mould with a labelled diagram.
- (d) Explain spring actuation method in split type of injection mould.
- (e) What is an unscrewing mould ? Explain.

**(B) Answer any ONE of the following : 06**

- (a) What is a location ring ? State its purpose and its types.
- (b) Explain nickel plating method and polishing methods for an injection mould.

**5. Answer any TWO of the following : 16**

- (a) Explain auxiliary RAM type transfer mould with a labelled diagram.
- (b) Explain about runner plate design in three plate mould.
- (c) Describe nitrating method and chrome plating method.

**6. Answer any FOUR of the following : 16**

- (a) Give the classification of mould materials.
  - (b) What is case hardening ? Explain carburising treatment.
  - (c) Describe with a diagram, in line layout of impressions.
  - (d) Explain hydraulic actuation method for split mould with a diagram.
  - (e) Explain fan gate and an edge gate with labelled sketches.
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