

17549

21819

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any TEN of the following: **20**
- Define runner and gate.
 - Name any two types of mould used for complicated products.
 - State the utility of split mould.
 - State the principle of operation of spring actuation.
 - List any four products for which mould with side core is used.
 - Name the mechanisms for unscrewing threaded mould.
 - Name one product each having internal and external thread.
 - State the purpose of incorporating third additional plate in three plate injection mould.
 - Enlist the factors to be considered while designing three plate mould.

P.T.O.

- j) List any four applications of three plate injection mould.
- k) Enlist the standard components of compression mould.
- l) State the basic difference between integral pot and auxiliary ram transfer mould.
- m) Classify mould materials.
- n) State the necessity of heat treatment to mould parts.

2. Attempt any TWO of the following: 16

- a) Draw a neat labeled sketch of two plate injection mould and state the function of each mould component.
- b) Draw neat sketches of any eight types of gate.
- c) Explain finger cam method to operate split mould with neat sketch.

3. Attempt any TWO of the following: 16

- a) Explain the construction and working of injection mould for internally threaded design.
- b) Explain dog leg cam actuation mechanism with neat sketch.
- c) (i) Explain the criteria for selection of split mould.
(ii) Explain hydraulic actuation mechanism used in split mould.

4. Attempt any FOUR of the following: 16

- a) Explain with neat sketch construction of flash compression mould.
- b) Draw a neat sketch of injection mould for externally threaded design.
- c) Draw neat labeled sketches of any two types of runner cross section.
- d) State any four advantages of multi cavity mould over single cavity mould.
- e) Explain design aspects of three plate injection mould.
- f) Explain pitch circle layout with neat sketch.

- 5. Attempt any FOUR of the following:** **16**
- a) Explain the necessity of three plate injection mould.
 - b) Draw a neat labeled sketch of integral pot type transfer mould.
 - c) Describe design of runner plate in three plate injection mould.
 - d) Explain any two types of gating systems used in three plate injection mould.
 - e) Describe constructional details of positive compression mould with neat sketch.
 - f) Explain working of auxiliary ram type transfer mould with sketch.
- 6. Attempt any FOUR of the following:** **16**
- a) Compare compression and transfer mould with respect to any four points.
 - b) Name the material of construction of guide pillar and guide bush. State the reason for the selection of same.
 - c) Explain procedure of hardening and state the changes in properties that takes place.
 - d) Explain the purpose and method of chrome plating the moulds.
 - e) Explain the purpose and method of polishing the moulds.
 - f) Draw a neat labeled sketch of three plate injection mould showing its construction.
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