



17549

15162

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) *Use of Non-programmable Electronic Pocket Calculator is permissible.*
 - (7) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*
 - (8) *Use of Steam tables, logarithmic, Mollier's chart is permitted.*

Marks

1. Answer any ten :

(10×2=20)

- a) Define runner. List type of runners.
- b) Draw diagram of a sprue.
- c) Name any four products for which split mould is used.
- d) What do you mean by side core ? Name any two plastic products in which side core is used.
- e) Distinguish between two plate conventional mould and two plate split mould.
- f) Explain principle of hydraulic actuation.
- g) List the types of split design. List the factors to be considered to design split.
- h) Draw a diagram of flash type of compression mould.
- i) Name the mould materials used for compression and transfer mould.
- j) Define three plate mould.
- k) List the types of underfeed three plate mould.
- l) What are the factors to be considered while designing a three plate mould ?
- m) What is heat treatment ? Why is it necessary for injection mould ?
- n) Where are multicavity moulds used ?

2. Answer any four :

(4×4=16)

- a) Define gate. Name types of gate. Draw diagram of a sprue gate.
- b) Draw a labelled diagram of any product for which split mould is used ? Explain it in brief.
- c) List the factors to be considered while designing a threaded article.
- d) Draw a labelled diagram of three plate mould. State functions of each part.
- e) Describe the working of a positive type of compression mould.
- f) Explain principle of nickle-plating.

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- 3. Answer any four:** (4×4=16)
- Draw diagram of a two plate mould. Write the function of each part.
 - List the factors to be considered while designing a split mould. Explain any one with example.
 - Name types of internal thread design. Explain the fix thread design with an example.
 - Explain internal pot type of transfer mould.
 - What do you mean by hardening ? Why is it necessary for steel ?
- 4. Answer any four:** (4×4=16)
- Explain purpose of split mould.
 - Why is split mould is necessary for certain plastic product ? List the types of mechanism used to operate split.
 - What do you mean by unsourcing mould ? List the types of unsourcing mechanisms.
 - Differentiate between three plate and two plate injection mould.
 - Distinguish between compression and transfer mould.
 - Why is nitration necessary for injection mould ? How is it different from hardening ?
- 5. Answer any four:** (4×4=16)
- Explain with an example of position of a gate.
 - Describe the finger leg cam method for operation of split.
 - List types of layout used for multi-impression mould. Explain pitch circle layout with an example.
 - Describe a feeding method used for three plate mould.
 - Describe the factors to be considered to design a transfer mould.
 - Name the types of polish method used for injection mould. Explain any one method.
- 6. Answer any four:** (4×4=16)
- What do you mean by ejection ? Why is it necessary to have ejection for plastic product ?
 - Explain dog-leg cam method to actuate split mould.
 - Compare : internal thread and external thread.
 - List the different three plate mould designs. Explain any one.
 - Draw labelled diagram of auxiliary ram type of mould.
 - List the types of non ferrous materials used for injection mould. Write properties of any one nonferrous material used for injection mould.
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