

MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY

MANUFACTURING PROCESS (2018-19)

Assignment 1

- Q1. a) Illustrate different types of manufacturing processes.
b) Give the composition and applications of alloys of copper and aluminium.
- Q2. a) Classify steel based on its carbon percentage.
b) Differentiate between:
- i. Malleability and ductility
 - ii. Toughness and stiffness

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Assignment 2

Q1. Classify several heat treatment processes, and discuss the following along with their advantages.

- i. Annealing
- ii. Normalizing
- iii. Tempering

Q2. a) Explain Investment casting process along with its applications.

- b) Define a master pattern.
- c) Why the sprue is being tapered in a gating system?
- d) Define a core and chaplet.

Q3. Make a neat cross-sectional sketch of cupola, indicating its various zones and describe the following:

- a) Its construction
- b) Preparation of cupola
- c) Different zones and their functions

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Assignment 3

- Q1. a) Compare between Smithing and Forging processes?
b) Sketch and describe the following:
- i. Swage Block
 - ii. Punches
- Q2. Describe Press Forging. How does it differ from Drop Forging?

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Assignment 4

Q1. a) Explain different types of electrodes used in welding?

b) What is edge preparation? Explain different types of joints in welding with sketches.

Q2. Describe the following:

- i. Spot welding
- ii. TIG welding
- iii. Percussion welding

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Assignment 5

Q1. a) Explain the benefits of powder metallurgy over conventional manufacturing processes?

b) Explain the process of embossing and coining with suitable sketches.

Q2. Explain the following powder metallurgy processes:

a) Blending

b) Briquetting

c) Presintering