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Question Paper Code: AMEB05



INSTITUTE OF AERONAUTICAL ENGINEERING (Autonomous)

Four Year B.Tech III Semester End Examinations(Regular) - November, 2019

Regulation: IARE – R18

MANUFACTURING PROCESS

Time: 3 Hours

(ME)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

- (a) Discuss the relative merits and applications of casting process. [7M]
(b) Explain the details of match plate pattern and skeleton pattern with neat sketches. [7M]
- (a) Define pattern and explain the considerations for selecting pattern materials. [7M]
(b) What is investment casting process? What are the main materials used for making an investment pattern? Explain the steps involved in the investment casting process. [7M]

UNIT – II

- (a) Classify various types of welding processes. Distinguish between gas welding and arc welding processes. [7M]
(b) Define polarity as applied to DC arc welding. How is this advantageously used? [7M]
- (a) Define welding. What is the use of filler material in welding? What are the various applications? [7M]
(b) Explain TIG welding process with a neat sketch and enumerate its advantages. [7M]

UNIT – III

- (a) Define rolling. Explain the principle and mechanism of rolling. [7M]
(b) Explain bending. How do you find the forces required for bending of sheet metal? [7M]
- (a) Differentiate between compound, combination and progressive dies. [7M]
(b) Explain the possible defects in rolling and suggest suitable remedies. [7M]

UNIT – IV

- (a) Explain the need for rapid prototyping. Discuss additive manufacturing. [7M]
(b) Explain impact extrusion with a neat sketch. [7M]
- (a) Distinguish between cold extrusion and hot extrusion. Describe hydrostatic extrusion. [7M]
(b) What is rapid prototyping? Explain the difference between traditional prototyping and rapid prototyping [7M]

UNIT – V

9. (a) What is meant by press forging. How does it differ from drop forging? [7M]
(b) What are the different forging defects? Explain them briefly. [7M]
10. (a) What are the advantages and limitations of swaging? Explain rotary swaging with a neat sketch. [7M]
(b) What is the principle of forging process? Explain the bolt manufacturing by cold forging. [7M]