



Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S4 (R,S) / S4 (PT) (R,S) / S4 (WP) (R) Examination May 2024 (2019 Scheme)

Course Code: MET204

Course Name: MANUFACTURING PROCESS

Max. Marks: 100

Duration: 3 Hours

PART A*(Answer all questions; each question carries 3 marks)*

Marks

- | | | |
|----|--|---|
| 1 | List the advantages of casting process over shaping process? | 3 |
| 2 | Explain the functions of riser? | 3 |
| 3 | Discuss the difference between brazing and soldering? | 3 |
| 4 | Explain the principle of TIG welding? | 3 |
| 5 | Define rolling. Differentiate hot rolling from cold rolling? | 3 |
| 6 | With the aid of a sketch, explain thread rolling. | 3 |
| 7 | Describe briefly the extrusion defects? | 3 |
| 8 | Distinguish between open and closed die forging processes? | 3 |
| 9 | Explain the principles of clamping? | 3 |
| 10 | Differentiate between wire drawing and bar drawing? | 3 |

PART B*(Answer one full question from each module, each question carries 14 marks)***Module -1**

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|----|--|---|
| 11 | a) With the help of a neat sketch, explain the principle of gating system? | 7 |
| | b) Explain Lost wax process? | 7 |
| 12 | a) Explain the various properties of moulding sand? | 6 |
| | b) Explain the various casting defects? | 8 |

Module -2

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|----|---|---|
| 13 | a) Explain submerged arc welding process with the help of a neat sketch? | 7 |
| | b) Explain the oxy-acetylene welding process. Also explain its various flame characteristics? | 7 |
| 14 | a) Explain any one resistance welding process? | 5 |
| | b) Discuss the factors that influence weld quality? | 5 |
| | c) Explain straight and reversed polarities in arc welding? | 4 |

Module -3

- 15 a) Explain how I beams and axles are made by rolling? 7
b) Explain the various defects observed in rolled plates? 7
- 16 a) An annealed copper strip 300 mm wide and 30 mm thick is rolled to thickness 25 mm in one pass. The roll radius is 350 mm and rolls rotate at 120 rpm. Calculate the roll force and power required in this operation? 5
Assume average flow stress of copper as 180 MPa
- b) Classify the types of rolling mills and sketch them. 9

Module -4

- 17 a) Explain the various defects in forged parts. 6
b) Define deep drawing processes and explain its features and applications. 8
- 18 a) With the help of a sketch, explain impression die forging? 7
b) Explain hydrostatic extrusion and impact extrusion using neat sketches? 7

Module -5

- 19 a) Explain the various sheet metal forming operations? 9
b) Differentiate between Vacuum clamping and magnetic clamping? 5
- 20 a) With the aid of the sketch, explain stretch forming? 5
b) Explain the features and working of inverted dies, compound dies and progressive dies. 9
