

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019**

**Course Code: ME311**

**Course Name: MANUFACTURING PROCESSES**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any three full questions, each carries 10marks.*

Marks

- |   |  |      |
|---|--|------|
| 1 | Discuss shell mould casting, mention its advantages and disadvantages  | (10) |
| 2 | a) Explain the properties required for a moulding sand.  | (5)  |
|   | b) Explain any two common pattern allowances in detail.  | (5)  |
| 3 | What do you understand by the term 'forging'? Explain the following (i) Open-die forging (ii) Closed-die forging | (10) |
| 4 | Explain the tube rolling process with suitable diagram.  | (10) |

**PART B**

*Answer any three full questions, each carries 10marks.*

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|---|---|------|
| 5 | Explain deep drawing operation with neat sketch and mention the importance of die clearance.                        | (10) |
| 6 | What is meant by spinning? Explain tube spinning with suitable figures.   | (10) |
| 7 | a) Compare brazing and soldering used in joining process.   | (5)  |
|   | b) What is meant by shielding in welding? Why it is necessary for welding?  | (5)  |
| 8 | What is NDT? Explain any one NDT method used in inspection of welding and mention its advantages and disadvantages. | (10) |

**PART C**

*Answer any four full questions, each carries 10marks.*

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|----|--|------|
| 9  | Explain Abrasive Jet Machining (AJM) process and its process parameters.   | (10) |
| 10 | Explain the principle and working of Electro Chemical Grinding (ECG) process with suitable diagram.  | (10) |
| 11 | Explain with a neat sketch the principle and working of Ultrasonic Machining (USM) process. List its advantages, disadvantages and applications. | (10) |

- 12      What is microfabrication technology? Explain (i) Micro cutting (ii) Micro finishing. (10)
- 13      What is rapid prototyping? Explain in detail (i) Liquid Thermal Polymerization (LTP) (ii) Fused Deposition Modelling (FDM). (10)
- 14      What is nano Technology? Give details about its applications in various fields. (10)

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