

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

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Fifth Semester B.Tech Degree Regular and Supplementary Examination December 2020

**Course Code: ME311****Course Name: MANUFACTURING PROCESSES**

Max. Marks: 100

Duration: 3 Hours

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

Marks

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|---|--|-----|
| 1 | a) Explain the properties required for a moulding sand.                  | (5) |
|   | b) Explain the basic steps involved in casting process.                  | (5) |
| 2 | a) Describe with neat sketch any one of melting furnaces.                | (6) |
|   | b) Explain any two pattern allowance in detail.                          | (4) |
| 3 | a) Discuss the principle and mechanism of rolling with suitable figures. | (5) |
|   | b) Explain the term closed die forging.                                  | (5) |
| 4 | a) With a neat sketch explain wire drawing.                              | (6) |
|   | b) Compare hot working and cold working process.                         | (4) |

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

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|---|---|------|
| 5 | What is meant by spinning? Explain tube spinning with suitable figures. | (10) |
| 6 | a) Explain the mechanism of shearing process.                           | (5)  |
|   | b) Explain in detail Hydroforming.                                      | (5)  |
| 7 | Explain Tungsten inert gas (TIG) welding in detail.                     | (10) |
| 8 | a) Compare brazing and soldering used in joining process.               | (5)  |
|   | b) Explain plasma arc welding.  | (5)  |

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

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|----|---|------|
| 9  | With a neat sketch explain Abrasive Water Jet Machining (AWJM) process.   | (10) |
| 10 | What is Electrical Discharge Machining (EDM)? Explain the principle and working with suitable diagram.              | (10) |
| 11 | Explain the principle and working of Electro Chemical Grinding (ECG) process with suitable diagram.                 | (10) |
| 12 | What is near net shape manufacturing? Explain any one method involved in manufacturing of near net shape component. | (10) |
| 13 | Explain metal injection moulding in detail.   | (10) |
| 14 | What is nano technology? Give details about its applications in various fields.                                     | (10) |

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