

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fourth semester B.Tech examinations (S), September 2020

Course Code: ME220**Course Name: MANUFACTURING TECHNOLOGY (IE, ME, MA)**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any three questions. Each question carries 10 marks.*

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|---|------|---|---|
| 1 | a) | With a neat diagram explain the Gating system used in sand casting process. | 7 |
| | b) | List the name of any six types pattern used for casting process? | 3 |
| 2 | a) | Write any six types of casting defects with simple diagram? | 6 |
| | b) | What is vacuum casting operation? | 4 |
| 3 | a) | Explain flat rolling process with suitable diagram. | 6 |
| | b) | Write any four differences between hot rolling and cold rolling | 4 |
| 4 | a) | Describe the following operations with simple diagram. | 6 |
| | (i) | Ring rolling | |
| | (ii) | Thread rolling | |
| | b) | Describe the working of planetary rolling mill with a neat sketch? | 4 |

PART B*Answer any three questions. Each question carries 10 marks*

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|---|------|--|----|
| 5 | a) | What are the important considerations for designing a forging die? List any four types of materials used for making forging die? | 6 |
| | b) | Explain any one type of precision forging process. | 4 |
| 6 | a) | With a neat sketch explain the wire drawing process. | 6 |
| | b) | Write any four differences between hot extrusion and cold extrusion. | 4 |
| 7 | a) | With a neat sketch explain the 3-2-1 principle of locating. | 7 |
| | b) | What are the advantages of the vacuum clamping technique? | 3 |
| 8 | a) | Explain the following clamping methods with suitable sketches: | |
| | (i) | Swing clamp | 10 |
| | (ii) | Strap clamp | |

PART C

Answer any four questions. Each question carries 10 marks.

- 9 a) With neat sketches illustrate the following
- (i) Deep Drawing process 10
 - (ii) Tube Spinning
- 10 a) Explain the process of stretch forming with a neat sketch 6
- b) What is Heat Affected Zone (HAZ) in the welding process? Explain with suitable sketch. 4
- 11 a) Write any four types of welding defects with simple diagram? 6
- b) Write any four factors influencing the solidification of the weld metal 4
- 12 a) Explain the working principle of submerged arc welding process with neat sketch; also write any two advantages and two disadvantages of the submerged arc welding process. 10
- 13 a) With the help of neat diagrams illustrate the following: 10
- (i) Friction Welding
 - (ii) Resistance Spot Welding
- 14 a) What is the use of solders and fluxes in soldering process, explain with suitable examples. 5
- b) List out the five differences between the welding process and the brazing process. 5