

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fourth Semester B.Tech (Minor) Degree Examination July 2021 (2019 admission)

Course Code: MET286**Course Name: MANUFACTURING TECHNOLOGY (MINOR)**

Max. Marks: 100

Duration: 3 Hours

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

Marks

- | | | |
|----|---|---|
| 1 | Explain any three properties required for the moulding sand. | 3 |
| 2 | Explain three types of pattern allowances in sand casting process. | 3 |
| 3 | Write a note on blending and mixing process in powder metallurgy. | 3 |
| 4 | Describe DCSP and DCRP arc welding processes. | 3 |
| 5 | Write a note on heat affected zone in a welding process and its significance. | 3 |
| 6 | Explain brazing process and list some applications of brazing process. | 3 |
| 7 | Compare the open die forging and the closed die forging processes with neat sketches. | 3 |
| 8 | Explain the barrelling effect in the open die forging process. | 3 |
| 9 | What is an etchant? List some examples of etchants. | 3 |
| 10 | Compare the isotropic and the anisotropic etching processes. | 3 |

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

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|----|---|----|
| 11 | Illustrate the investment casting process with neat sketches and list its advantages and disadvantages. | 14 |
| 12 | Illustrate the die casting process with neat sketches and list its advantages and disadvantages. | 14 |

Module -2

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|----|--|----|
| 13 | a) Explain any three powder production methods used in the powder metallurgy process. | 9 |
| | b) Explain the impregnation and the infiltration processes in powder metallurgy. | 5 |
| 14 | Explain the plasma arc welding process with a neat sketch and list its advantages and disadvantages. | 14 |

Module -3

- 15 Explain the shielded metal arc welding process with a neat sketch and list its advantages, disadvantages and applications. 14
- 16 a) Explain the torch brazing, the furnace brazing, the induction brazing and the dip brazing processes. 8
- b) Compare the brazing and the soldering processes and list the applications of each of the processes. 6

Module -4

- 17 Compare the direct, the indirect and the hydrostatic extrusion processes with neat diagrams. 14
- 18 Explain the various types of the chemical vapour deposition processes. 14

Module -5

- 19 a) Compare the surface micro machining and the bulk micro machining processes. 8
- b) Explain the wet etching and the dry etching processes. 6
- 20 Explain the various steps involved in the photolithography technique for the making of a MEMS device. 14
