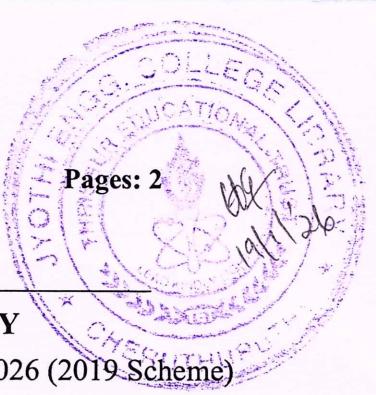


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
 B.Tech Degree S4 (S,FE) (FT/WP/PT) Examination December 2025/January 2026 (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	Explain any three desirable properties of pattern material used in metal casting.	3
2	Explain the functions of riser?	3
3	List any three practical applications of thermit welding.	3
4	Explain the principle of TIG welding?	3
5	Differentiate between thread rolling and thread cutting.	3
6	List different ways to reduce roll force in rolling process? Give any three.	3
7	Explain open and closed die forging processes?	3
8	Differentiate between drawing and extrusion processes.	3
9	Explain stretch forming process.	3
10	List any three methods to overcome spring back during bending operation.	3

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

11	a) With neat sketch explain any two types of patterns. Write a note on selection of patterns for castings	7
	b) Explain the hot chamber die casting process with the help of a neat sketch.	7
12	a) Compare semi centrifugal casting and centrifuge casting with line sketch.	6
	b) With the help of neat sketch explain the various casting defects?	8

Module -2

13	a) With neat sketches, explain the characteristics of different types of flames used in gas welding.	7
	b) With the help of a neat diagram explain the submerged arc welding process.	7
14	a) Explain weldability. Briefly explain any 6 factors influencing weldability of engineering materials.	7

b) Write a note on HAZ. Draw a schematic of various regions in a fusion weld zone. 7

Module -3

15 a) Draw a neat sketch and explain (i) Four high rolling mill (ii) Planetary rolling mill (iii) Cluster rolling mill (iv) Tandem rolling mill. 8

b) Explain the ring rolling process with a neat sketch. 6

16 a) Differentiate between hot rolling and cold rolling operation. 6

b) What is yield criterion? Explain Tresca and von Mises yield criteria. 8

Module -4

17 a) Define deep drawing processes and explain its features and applications. 8

b) List the various defects in forged parts. 6

18 a) With neat sketch explain hydrostatic extrusion and impact extrusion. 8

b) Explain the wire drawing process with the help of a neat diagram. 6

Module -5

19 a) List the different locating methods and explain any two of them. 8

b) Explain spring back which is observed in sheet metal bending. 6

20 a) Explain compound die, combination die and progressive die with the help of a neat diagram 9

b) Explain 3-2-1 principle of location. 5
