PVP 23

Code: 23ME3401

II B.Tech - II Semester – Regular Examinations - MAY 2025

MANUFACTURING PROCESSES
(MECHANICAL ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1.a)	Define casting and list its advantages.	L1	CO1
1.b)	What are the different types of patterns used in casting?	L1	CO1
1.c)	What are the different types of welding processes?	L1	CO1
1.d)	Differentiate between TIG and MIG welding.	L1	CO3
1.e)	Define bulk forming and give two examples.	L1	CO1
1.f)	What is recrystallization and how does it affect metal properties?	L1	CO1
1.g)	Define blanking and piercing.	L1	CO1
1.h)	What is spring back and how can it be minimized?	L1	CO1
1.i)	Define Additive Manufacturing.	L1	CO1
1.j)	List any four advantages of Additive Manufacturing.	L1	CO1

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	Explain the steps involved in making a casting.	L2	CO1	5 M
	b)	Discuss different types of molding processes and their applications.	L2	CO2	5 M
OR					
3	a)	Describe the centrifugal casting process with a neat sketch.	L2	CO2	5 M
	b)	Illustrate the working of Cupola furnace with a neat sketch.	L2	CO2	5 M
UNIT-II					
4	a)	Discuss the importance of pre-heating and post-heating in welding.	L2	CO1	5 M
	b)	Illustrate the working of Submerged Arc Welding process with a neat sketch.	L2	CO3	5 M
OR					
5	a)	Explain the Electron Beam Welding process and its advantages.	L2	CO3	5 M
	b)	What are the differences between soldering, brazing and welding?	L2	CO3	5 M
UNIT-III					
6	a)	Explain the process of forging and its types.	L2	CO4	5 M
	b)	What is strain hardening? How is it removed?	L2	CO4	5 M

OR					
7	a)	Discuss different types of extrusion processes and their applications.	L2	CO4	5 M
	b)	Explain the defects in forging and their remedies.	L2	CO4	5 M
UNIT-IV					
8	a)	Explain the process of stretch forming with applications.	L2	CO4	5 M
	b)	Discuss different types of presses used in sheet metal forming.	L2	CO4	5 M
OR					
9	a)	What is high-energy rate forming? Explain its importance.	L2	CO1	5 M
	b)	Illustrate the spinning process along with applications.	L2	CO4	5 M
UNIT-V					
10	a)	What are the different types of materials used in Additive Manufacturing?	L2	CO1	5 M
	b)	Explain the working of Electron Beam Melting (EBM) in Additive Manufacturing.	L2	CO5	5 M
OR					
11	a)	What are the challenges and limitations of Additive Manufacturing?	L2	CO1	5 M
	b)	Discuss the applications of Additive Manufacturing in the aerospace and medical fields.	L2	CO1	5 M