Reg. No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)
B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2025

MANUFACTURING ENGINEERING
MF23303 & FORMING TECHNOLOGY
(Regulation2023)

Time:3hrs Max.Marks: 100

CO1	Illustrate deformation types and classification of forming processes.
CO2	Describe bulk forming processes and their applications.
CO3	Elaborate different sheet metal forming processes and their applications.
CO4	Discuss powder forming processes and its applications
CO5	Elaborate various types of plastic forming processes and their applications.

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No.	Questions	Marks	CO	BL
1	What is meant by strain hardening?	2	1	1
2	What is meant by recrystallisation temperature?	2	1	1
3	List out the types of cold drawing.	2	2	1
4	State the difference between press and drop forging.	2	2	2
5	What are the characteristics of sheet metal?	2	3	1
6	What is meant by spring back effect?	2	3	1
7	How powder materials are characterized?	2	4	2
8	Mention any four advantages of powder forming.	2	4	1
9	What is calendaring?	2	5	1
10	State the difference between blow moulding and foam moulding.	2	5	2

PART- B(5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q. No.		Questions	Marks	CO	BL
11 (a)	i.	Discuss the factors that influence the choice of working temperature in metal forming processes.	7	1	3
	ii.	Describe point and line defects with neat sketches.	6	1	3
		OR			

11 (b)	i.	Compare and contrast Elastic and Plastic deformations.	7	1	3
	ii.	Compare and contrast Slipping and Twinning mechanism.	6	1	3
12 (a)	i.	Discuss about hot extrusion and its types with a neat sketches	7	2	3
	ii.	Discuss the various types of rolling defects, their causes and remedies.	6	2	3
		OR			
12 (b)	i.	Describe the Mannesmann process of manufacturing seamless tube with a suitable diagram.	7	2	3
	ii.	Enumerate the various types of forging defects, their causes and remedies.	6	2	3
13 (a)	i.	Discuss about the hydro mechanical forming with a neat sketch.	7	3	3
	ii.	Discuss about the super plastic forming process with a neat sketch.	6	3	3
		OR			
13 (b)	i.	Compare and contrast the advantages and limitations of rubber pad forming against conventional deep drawing processes.	10	3	3
	ii.	Enumerate the limitations of Stretch forming	3	3	3
14 (a)	Discuss the various stages involved in the preparation of powder metallurgy components with simple sketches		13	4	3
		OR			
14 (b)	Demonstrate the methods of hot and cold isostatic pressing with neat diagrams.		13	4	3
15 (a)	Discuss the sequence of operations involved in the rotational moulding process using neat sketches.		13	5	3
		OR			
15 (b)	Discuss the sequence of operations involved in the transfer moulding process using neat sketches.		13	5	3

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	Evaluate the advantages and disadvantages between cold working and hot working processes when manufacturing a automotive component namely, connecting rod. Justify which method you would recommend for maximizing both strength and cost-effectiveness.	15	1	L5