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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)



B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APRIL/ MAY 2024

B.E. AERONAUTICAL ENGINEERING
(Common to Mechanical Engineering)

Semester VI

ME5251-MANUFACTURING PROCESSES

(Regulation2019)

Time: 3hrs

Max. Marks: 100

CO1	To learn about casting process and its classifications.
CO2	To learn about welding process.
CO3	To learn about various Machining process.
CO4	To learn about forming and shaping of plastics.
CO5	To learn about metal forming and powder metallurgy.

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 the principle behind Shell moulding process?	2	1	1
2	Define 'Pattern allowances' and its types.	2	1	1
3	Distinguish between fusion welding and solid state welding.	2	2	2
4	Explain thermit welding with a suitable application.	2	2	2
5	Define 'Ring rolling'	2	3	1
6	Enumerate the differences between hot working and cold working of metals.	2	3	2
7	Define the process of 'curling'	2	4	1
8	Discuss the principle of hydro forming.	2	4	1
9	Define "Elastomer".	2	5	1
10	What are the materials that are suited for Rotational molding?	2	5	1

PART- B(5x 13=65Marks)

(Restrict to a maximum of 2 subdivisions)

Q. No.	Questions	Marks	CO	BL
11 (a)	Discuss in detail with neat sketches about Centrifugal casting with its applications, advantages and disadvantages.	13	1	1
OR				
11 (b)	Define the term 'pattern' in casting and describe what are the materials used for making patterns. List the types with suitable diagrams.	13	1	1
12 (a)	Explain any three types of Fusion welding processes with a neat sketch. Also mention its advantages and limitations.	13	2	2
OR				
12 (b)	Discuss the working principle of Electron beam welding and	13	2	2

	state how it is differentiated from Plasma arc welding.			
13 (a)	Explain Forging processes types, Characteristics and the operations involved in each process.	13	3	1
OR				
13 (b)	Discuss in detail about the principle and classifications of Drawing process with neat diagrams.	13	3	1
14 (a)	Discuss the following related to sheet metal processes with neat sketches (i) Shearing, Bending and Drawing Operations. (ii) Testing methods	8 5	4 4	1 1
OR				
14 (b)	Elaborate the process of Explosive forming with its applications	13	4	1
15 (a)	Explain any three types of Transfer molding processes with a neat sketch. Also, list its advantages and limitations.	13	5	2
15 (b)	Elaborate the working process of blow moulding. Discuss its types and limitations.	13	5	2

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q. No.	Questions	Marks	CO	BL
16.	In the realm of medical industries, an essential technique plays a pivotal role in fabrication of the surgical syringes and insulin pens. Describe in detail about this process, its principle and working limitations in detail. 	15	5	3

