Exam Date & Time: 15-Jan-2024 (02:30 PM - 05:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SEVENTH SEMESTER B.TECH END SEMESTER EXAMINATIONS, JAN 2023 THEORY OF METAL FORMING [MME 4094]

Α

Answer all the questions.

Ins	tructions to	Candidates: Answer ALL questions Missing data may be suitably assumed	
1)		A band of lead 50mm x 50mm x 150mm is forged between two flat dies to a size of 6.25mm x 100mm x 125mm. If the coefficient of sliding friction between the dies and	
	A)	the work is 0.30, Average yield stress of tin in tension is 10 N/mm ² , calculate maximum forging pressure at an interval of 7.25mm and maximum forging pressure assuming a sticking friction.	(4)
	B)	Explain Bulk Deformation Process	(4)
	C)	Sketch and Explain Extrusion Process	(2)
2)		Explain with sketch Recovery, Re-crystallization and Grain Growth	
			(4)
	A) D)	Eventain with Shotah Dahhan Dad Famaing and Startah Famaing	
	Б)	Explain with Sketch Rubber Pad Forming and Stretch Forming.	(4)
	C)	What are the defects in Rolling process?	(2)
3)		Explain with Sketch Electro Magnetic Forming.	
			(4)
	A)		
	B)	Explain with Sketch Tube Drawing and Wire Drawing.	(4)
	C)	What are the defects in Forging?	
	2)		(2)
4)		Explain Thermal effects in Metal Forming with advantages and disadvantages	
			(4)
	A)		
	B)	Explain the role of lubrication in Metal Forming Process	(4)
	C)	Explain Slipping and Twinning	
	-,		(2)

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Marks: 50

Duration: 180 mins.

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5)	Explain characteristics, advantages and disadvantages of Hot Rolling	
		(4)
A)		
B)	Explain with Sketch Cluster mill and Merchant Mill	(4)
C)	Differentiate between Open die and Closed die Forging	(2)

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