CLASS: BTech	SEMESTER: V	
BRANCH: PIE	SESSION: MO/2023	

SUBJECT: PE319 MATERIAL DEFORMATION PROCESSES

TIME: 02 Hours   FULL MARKS: 25

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

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			CO	BL
Q.1(a)	State deformation zone along with approximate state of stress for rolling and closed die forging?	[2]	CO1	BL2
Q.1(b)	Differentiate the hot and cold working in terms of temperature, stress build-up, recovery, cracks and uniformity?	[3]	CO1	BL2
Q.2(a)	With neat sketch, classify the rolling process?	[2]	CO1	BL2
Q.2(b)	In a rolling operation using rolls of diameter 500mm if a 25mm thick plate cannot be reduced to less than 20mm in one pass. Find the coefficient of friction between the roll and the plate?	[3]	CO2	BL3
Q.3(a)	What are the advantages and disadvantages of thermomechanical treatment?	[2]	CO1	BL2
Q.3(b)	Discuss the various explosive forming techniques based on placement of explosive?	[3]	CO1	BL2
Q.4(a)	Write the differences between coefficient of friction and interfacial friction?	[2]	CO3	BL2
Q.4(b)	Discuss the Stribeck curve and Hersey number used in friction?	[3]	CO3	BL2
Q.5(a)	Why lubricant is important in metal working? Also write the properties of an ideal lubricant.	[2]	CO3	BL2
Q.5(b)	Classify the lubricants with examples used in metal working?	[3]	CO3	BL2

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