Reg.No.					



MANIPAL INSTITUTE OF TECHNOLOGY Manipal University, Manipal – 576 104



V SEM. B.Tech. MECHANICAL DEGREE END SEMESTER EXAMINATIONS NOVEMBER/DECEMBER 2015

SUBJECT: ADVANCED MANUFACTURING TECHNIQUES (MME 307) REVISED CREDIT SYSTEM

Time: 3 Hours.

MAX.MARKS: 50

Instructions to Candidates:

✤ Answer ANY FIVE FULL questions.

1A)	Discuss the various additives added to plastics to enhance/impart	
	properties. Give some examples of each type of additives added.	(02)
1B)	List the various steps involved in producing powder metallurgy	
	components. Explain the powder production by hammer milling	(04)
	technique with a neat sketch.	
1C)	With a neat sketch, explain the process of 3 D Printing (3DP) used	
	in Rapid Prototyping.	(04)
2A)	Explain the following components used in Chemical Machining:	
	1. Maskant	
	2. Etchant	
	3. Electrolyte	(04)
	4. Electrodes	(04)
2B)	How do you manufacture soft drink bottles? Explain the plastic	<i>(</i>
	forming process used with the help of a neat sketch.	(04)
2C)	Briefly explain what are the benefits of jigs and fixtures?	(02)
3A)	Distinguish between grinding and microfinishing techniques.	(04)
3B)	List the characteristics accomplished by sintering process.	(02)
3C)	Classify various lapping techniques and with a neat sketch explain	
	the working of vertical lapping machines.	(04)
4A)	Explain Electro-chemical Grinding (ECG) process. How it differs	
	from Traditional grinding?	(04)
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4B)	State and briefly explain all the honing conditions.				
4C)	What are the differences jigs and fixtures?				
5A)	What are the functions performed by carrier gases used in				
	Abrasive Jet Machining (AJM). List the commonly used carrier				
	gases in AJM?	(02)			
5B)	List the process variables that affect electro-hydraulic forming and	(0.4)			
	briefly explain any four of them.	(04)			
5C)	Explain briefly the principle of working of Laser Beam machining				
	(LBM) process and highlight its process parameters.	(04)			
6)	Write short note on:				
	6A. Types of Locators.				
	6B. Production of metal powders.				
	6C. Injection Moulding.				
	6D. Stereolithography.	(2.5×4=10)			