Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI EXAMINATION – SUMMER 2025

Subject Code: 3161922 Date: 30-05-2025

Subject Name: Advanced Manufacturing Processes

Time: 10:30 AM TO 01:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	Classify the Unconventional machining processes based on the type of energy used.	**03**
	(b)	Explain the mechanism of material removal in AJM.	**04**
	(c)	Distinguish between conventional and Unconventional machining processes.	**07**
Q.2	**(a)**	State the applications of Glass.	**03**
	(b)	Differentiate between the LBM and EBM process.	**04**
	(c)	With the neat sketch explain the working principle of USM, and also state the advantages, disadvantages and applications of it.	**07**
		OR	
	(c)	With the neat sketch explain the working principle of EDM, and also state the advantages, disadvantages and applications of it.	**07**
Q.3	**(a)**	State the function of dielectric fluid in EDM, and also name the most commonly used dielectric fluid in EDM.	**03**
	(b)	Differentiate between EDM and Wire EDM.	**04**
	(c)	Explain the process parameters of AJM that affect the MRR and accuracy of the machining process.	**07**
		OR	
Q.3	**(a)**	State the function of electrolytes in ECM, and also name the most commonly used electrolytes in ECM.	**03**
	(b)	Describe the function of the intensifier and accumulator in the WJM process.	**04**
	(c)	Explain the process variables of USM that affect the MRR of the machining process.	**07**
Q.4	**(a)**	Classify the RP processes.	**03**
	(b)	Differentiate between the LOM process and Stereolithography (SLA) process.	**04**
	(c)	Describe the Selective Laser Sintering Process with a neat sketch. State their process parameters.	**07**
		OR	
Q.4	**(a)**	Write advantages of RP processes.	**03**
	(b)	Explain the generic RP process.	**04**
	(c)	Explain the Solid Ground curing (SGC) process with a neat sketch. State their advantages.	**07**
Q.5	**(a)**	State the function of the following in Glass manufacturing 1. Formers 2. Fluxes 3. Stabilizers	**03**
	(b)	Describe the current industrial applications of the composites.	**04**
	(c)	Explain the filament winding process with the help of a neat sketch.	**07**
		OR	
Q.5	**(a)**	Classify the composite materials.	**03**
	(b)	Compare the Hand Lay-up process and spray-up processes.	**04**
	(c)	Describe the steps involved in the Glass manufacturing process.	**07**

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