Seat No.:		Enrolment No	
		GUJARAT TECHNOLOGICAL UNIVERSITY M.E –I <sup>st</sup> SEMESTER–EXAMINATION – JULY- 2012	
Subj	ject	code: 710807N Date: 11/07/2012	
Гim	e: 2:	Name: Advanced Materials and Processes 30 pm – 05:00 pm Total Marks: 70 tions:	
		tempt all questions.	
2.	. Ma	ake suitable assumptions wherever necessary. gures to the right indicate full marks.	
Q.1		What is Advanced Engineering Material? Explain the Classification of Advanced Engineering Materials.	07
	<b>(b)</b>	What is standardization? Explain importance of standardization in Manufacturing and Assembly of Mechanical Components.	07
Q.2	(a)	What is Design for X? Explain Different attributes of a Good Design.	07
	<b>(b)</b>	What is Concurrent Engineering? Explain the Advantages and Limitations of Concurrent Engineering in Design.	07
		OR	
	<b>(b)</b>	What is Material Selection in Engineering Design? Explain the importance of Ashby Charts in Material Selection.	07
Q.3	(a)	What is Non Destructive Testing? Explain the importance of Ultrasonic Testing in Mechanical Engineering.	07
	<b>(b)</b>	Which material is used for Computer Memory Device? Why?	<b>07</b>
		OR	
Q.3	(a)	What are the Errors in Metal Casting? Explain importance of Solidification Simulation in Casting Design.	07
	<b>(b)</b>	Why Pre and Post treatment is required in Welding? Explain effects of thermal stress in welded joints.	07
Q.4	(a)	Explain and differentiate Fatigue Fracture and Delayed Fracture.	07
	<b>(b)</b>	What is Parting Line? Explain Design Considerations of Parting Line in Forging Design.	07
		OR	
Q.4	(a)	Explain Design Considerations for machining of a Rotational Parts.	07
	<b>(b)</b>	Explain the importance of Advanced Polymeric Materials in Engineering.	07
Q.5	(a)	What are the characteristics of Advance Ceramics Material? Explain the	07
	<b>(b)</b>	importance of Advance Ceramics in Automobile Industry. What is corrosion? Explain Corrosion Prevention and Control.	07
		OB	

- Q.5 (a) Explain Special Processing Techniques and use of Computer in processing of Advanced Ceramics Materials.
  - (b) What is Wet Corrosion? Explain the Mechanism of Corrosion for underground pipes and its protection method.

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