Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – III • EXAMINATION – WINTER • 2013

Subj	ect l	Nar	ne: Lean Manufacturing System and Implementation am – 01.00 pm Total Marks: 70	
Instr			•	
	1. 2.	Att Ma	empt all questions. ke suitable assumptions wherever necessary. ures to the right indicate full marks.	
Q.1		(a) (b)	Differentiate between Mass production and Lean Production. What is "Muda" in TPS? Explain various waste identified in TPS with respect to manufacturing system.	07 07
Q.2		(a) (b)	Explain the working of two-card KANBAN system with suitable example. Explain the role of TPM in lean manufacturing system. Enlist the pillars of TPM system and clearly describe any two of them. OR	07 07
	((b)	What is "workcell"? Differentiate between Functional layout and Cellular layout.	07
Q.3		(a) (b)	Clearly differentiate between "Internal Setup" and "External Setup" with respect to setup operation. Explain four conceptual stages of SMED. Define "TQM". What is the role of TQM philosophy in successful lean implementation?	07 07
Q.3		(a) (b)	Clearly define and describe "5S" tools. What is VSM? Explain the steps to perform VSM for process improvement.	07 07
Q.4		(a) (b)	Draw and explain various graphic elements related VSM. Define and explain following with respect to Lean Manufacturing. (i) Andon (ii) Heijunka (iii) Jidoka OR	07 07
Q.4		(a) (b)	Discuss the process of Lean manufacturing concept evolution. Discuss the five primary elements of Lean manufacturing.	07 07
Q.5		(a) (b)	What does " σ " represent with respect to a process? Compare 3σ with 6σ . Explain "DMAIC" approach with respect to 6σ .	07 07
Q.5		(a) (b)	Write a short note on "Keys to successful implementation of JIT". Clearly mention similarities and differences between TQM and TPM. ***********************************	07 07