

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – III • EXAMINATION – WINTER • 2013****Subject code: 735004****Date: 28-11-2013****Subject Name: Lean Manufacturing System and Implementation****Time: 10.30 am – 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.

- Q.1** (a) Differentiate between Mass production and Lean Production. **07**
(b) What is “Muda” in TPS? Explain various waste identified in TPS with respect to manufacturing system. **07**

- Q.2** (a) Explain the working of two-card KANBAN system with suitable example. **07**
(b) Explain the role of TPM in lean manufacturing system. Enlist the pillars of TPM system and clearly describe any two of them. **07**

OR

- (b) What is “workcell”? Differentiate between Functional layout and Cellular layout. **07**

- Q.3** (a) Clearly differentiate between “Internal Setup” and “External Setup” with respect to setup operation. Explain four conceptual stages of SMED. **07**
(b) Define “TQM”. What is the role of TQM philosophy in successful lean implementation? **07**

OR

- Q.3** (a) Clearly define and describe “5S” tools. **07**
(b) What is VSM? Explain the steps to perform VSM for process improvement. **07**

- Q.4** (a) Draw and explain various graphic elements related VSM. **07**
(b) Define and explain following with respect to Lean Manufacturing. **07**
(i) Andon (ii) Heijunka (iii) Jidoka

OR

- Q.4** (a) Discuss the process of Lean manufacturing concept evolution. **07**
(b) Discuss the five primary elements of Lean manufacturing. **07**

- Q.5** (a) What does “ σ ” represent with respect to a process? Compare 3σ with 6σ . **07**
(b) Explain “DMAIC” approach with respect to 6σ . **07**

OR

- Q.5** (a) Write a short note on “Keys to successful implementation of JIT”. **07**
(b) Clearly mention similarities and differences between TQM and TPM. **07**
