

**MANIPAL INSTITUTE OF TECHNOLOGY** 

(A constituent unit of MAHE, Manipal)

## VII SEMESTER B.TECH. (MECHANICAL/IP ENGINEERING) END SEMESTER EXAMINATIONS, NOV 2019

SUBJECT: LEAN MANUFACTURING [MME 4007] (PE VI)

## REVISED CREDIT SYSTEM (28/11/2019)

Time: 3 Hours

MAX. MARKS: 50

## Instructions to Candidates:

- ✤ Answer all questions.
- ✤ Missing data may be suitably assumed.
- **1A.** Write a short note on Poka Yoke. (3) 1B. Explain with an example, the importance of selecting a product family in (3) value stream mapping. 1C. (4) Explain the job description for a value stream manager. 2A. Explain 'paced withdrawal' with a neat sketch. (3) **2B.** Calculate the time in each shift for improvement in a company for a month by (3) considering 30 days in a month, 4 holidays, 8 hours per shift, two shifts per day, 60 minutes for monthly safety meeting, 60 minutes for weekly kaizen meeting and 120 minutes for TPM, PM and 5s cleaning. **2C.** Explain the points to be considered to design a Kanban. (4) What is economic order quantity? Explain with a numerical example. 3A. (3) 3B. With a flow chart explain the framework of Toyota's production smoothing. (3) 3C. Explain how to maintain production smoothing during fluctuating market (4) demand.
- **4A.** Differentiate between MRP and Kanban.(4)

4B.	Write a short note on calculating buffer in Kanban.	(3)
4C.	Draw organization structure for promoting setup time reduction	(3)
5A.	Differentiate product flow layout and job shop layout.	(3)
5B.	Explain shortening processing time through small-sized lot production	(3)
5C.	In value stream mapping justify the statement - value stream mapping ties	(2)
	together lean concepts and techniques, which helps you avoid "cherry	
	picking".	

5D. In shortening setup time justify the statement – although mechanical systems (2) are very convenient, an expensive investment in them would be "putting the cart before the horse"

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