

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2019 - 20 Examination

Semester: 1
Subject Code: 203208132
Subject Name: Lean Manufacturing

Date: 18/12/2019
Time: 10: 30 am to 01:00 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 A) Define JIT with its objectives. **(05)**

B) Draw the block diagram to depict conceptual characteristics of agile manufacturing. **(05)**

C) Write principles of Lean Manufacturing. **(05)**

Q.2 Answer the following questions. (Attempt any three) (Each five mark) **(15)**

A) Compare Six Sigma with Lean concept.

B) Explain the Toyota Production Model.

C) Describe concept of (i) TPM (ii) TQM in brief.

D) Classify cellular manufacturing layouts. Why Cellular Layout is more popular compare to others?

Q.3 A) Differentiate “push” and “pull” methods of material flow? Which does lean systems use? **(07)**

B) State the approaches for reducing set up time. Discuss the significance of set up time reduction to develop the culture of lean manufacturing with case study of industry. **(08)**

OR

B) Describe case study to conduct VSM. **(08)**

Q.4 A) Describe various phases to implement KAIZEN. **(07)**

OR

A) Discuss steps to implement SMED using various tools with suitable case study. **(07)**

B) Solve the given case study to formulate machine cells using Rank Order Clustering algorithm.

		Parts Number					
		1	2	3	4	5	6
Machine ID	A	0	0	1	0	1	0
	B	0	1	1	0	0	0
	C	1	0	0	1	0	0
	D	0	1	1	0	1	0
	E	1	0	0	1	0	1

(08)