

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2024)

CLASS: B.Tech
BRANCH: PIE

SEMESTER : VI
SESSION : SP/2024

SUBJECT: PE349 LEAN MANUFACTURING & SIX-SIGMA

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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Q.1(a)	Explain Lean Manufacturing and enumerate the different types of wastes.	[2]	1	1																
Q.1(b)	Differentiate between push and pull manufacturing system. Discuss the role of Kanban in pull manufacturing system.	[3]	1	2																
Q.2(a)	What is the significance of “5S” in industry?	[2]	2	3																
Q.2(b)	Draw Ishikawa Fishbone Diagram for defects in Casting process.	[3]	2	3																
Q.3(a)	Explain CON-WIP.	[2]	1	2																
Q.3(b)	How can SMED play an important role in implementation of lean manufacturing in any industry?	[3]	2	3																
Q.4(a)	Explain the concept of Pareto Chart and prepare a Pareto chart for the given data:	[5]	2	4																
	<table><tr><td>Defects</td><td>Dent</td><td>Paint</td><td>Abrasion</td><td>Tear</td><td>Brittle</td><td>Label</td><td>Stitching</td></tr><tr><td>Frequency</td><td>76</td><td>25</td><td>34</td><td>5</td><td>10</td><td>18</td><td>3</td></tr></table>	Defects	Dent	Paint	Abrasion	Tear	Brittle	Label	Stitching	Frequency	76	25	34	5	10	18	3			
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Q.5(a)	What are the objectives of TPM?	[2]	3	2																
Q.5(b)	Explain the pillars of TPM.	[3]	3	2																

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