

IAT 2 Scheme & Solution

Sub: **Technology and Operational Strategy** Code: **20MBA302**
Date: **22-01-2022** Duration: 90 mins Max Marks: 50 Sem: III Branch: MBA

OBE

Marks CO RBT

Part A -Answer Any Two Full Questions (20*02=40 Marks)				
1(a)	<p>Define lean manufacturing</p> <ul style="list-style-type: none"> Lean manufacturing is a production process based on an ideology of maximizing productivity while simultaneously minimizing waste within a manufacturing operation. The lean principle sees waste is anything that doesn't add value that the customers are willing to pay for. 	[03]	CO3	L1
(b)	<p>Describe the principles of production system.</p> <ul style="list-style-type: none"> Its transformation processes Process uses labour, capital and space. Economists call above resources as “factors of production.” Production managers referred them as “five M’s” – Men, Machines, Methods, Materials, and Money. Production system further characterized by flows: Physical flow of materials (work in process, finished goods) Flow of information Inevitable paperwork The physical flows are subject to the constraints of the capacity of production system. 	[07]	CO5	L2
(c)	<p>Explain the benefits of lean manufacturing.</p> <ul style="list-style-type: none"> Eliminate Waste: Waste is a negative factor for cost, deadlines and resources. It provides no value to products or services Improve Quality: Improved quality allows companies to stay competitive and meet the changing needs and wants of customers. Designing processes to meet these expectations and desires keep you ahead of the competition, keeping quality improvement at the forefront Reducing Costs: Overproduction or having more materials than is required creates storage costs, which can be reduced through better processes and materials management Reducing Time: Wasting time with inefficient working practices is a waste of money too, while more efficient practices create shorter lead times and allow for goods and services to be delivered faster. 	[10]	CO3	L2
2(a)	<p>What do you mean by JIT (Just In Time).</p> <ul style="list-style-type: none"> The just-in-time (JIT) inventory system is a management strategy that minimizes inventory and increases efficiency. Just-in-time manufacturing is also known as the Toyota Production System (TPS) because the car manufacturer Toyota adopted the system in the 1970s. 	[03]	CO5	L1
(b)	<p>Explain the types of waste in lean manufacturing.</p> <p>1. Defects Defects impact time, money, resources and customer satisfaction.</p>	[07]	CO3	L2

Examples of Defects within a manufacturing environment include **lack of proper documentation or standards, Large variances in inventory, Poor design and related design documentation changes**
 An overall **lack of proper quality control** throughout the process workflow.

2. Excess Processing

- Excess processing is a sign of a poorly designed process.
- This could be related to management or administrative issues such as
- Lack of communication,
- Duplication of data,
- Overlapping areas of authority and human error.
- It may also be the result of equipment design, inadequate job station tooling or facility layout.

3. Overproduction

- When **components are produced before they are required by the next downstream process**, overproduction occurs.
- This has several negative effects.
- It creates a “caterpillar” effect in the production flow and results in the creation of excess WIP
- This leads to staging and therefore labor required to move the WIP additional times.
- And it [can hide defects](#) that could have been caught with less.

4. Waiting

- Waiting can **include people, material equipment (prior runs not finished) or idle equipment** (mechanical downtime or excess changeover time).
- All waiting costs a company has in terms of direct labor dollars and additional overhead costs can be incurred in **terms of overtime, expediting costs and parts.**

5. Inventory

- Inventory is considered a form of waste because of the related holding costs.
- This is true of raw materials, WIP and finished goods.
- Over purchasing or poor forecasting and planning can lead to inventory waste.

6. Transportation

- Poor plant design can cause waste in transportation.
- It can also trigger other wastes such as
- Waiting or motion and
- Impact overhead costs such as higher fuel and energy costs
- Higher overhead labor in the form of lift drivers
- Adding wear and tear on equipment.

7. Motion

- Motion costs money.
- This [not only includes raw materials](#) but also people and equipment.
 It may also include:
- Excess physical motion such as reaching, lifting and bending.
- All unnecessary motion results in non-value-added time and increases cost.

8. Non-Utilized Talent

- The eighth waste is the only lean manufacturing waste that is not

	<p>manufacturing-process specific.</p> <ul style="list-style-type: none"> This type of manufacturing waste occurs when management in a manufacturing environment fails to ensure that all their potential employee talent is being utilized. 												
(c)	<p>Apply 5S to admission process at our institution.</p> <p>5S</p> <ul style="list-style-type: none"> Seiri (Sort) Seiton (Straighten, Set) Seiso (Shine, Sweep) Seiketsu (Standardize) Shitsuke (Sustain) <p>Application above concepts to admission process is expected.</p>	[10]	CO5	L3									
3(a)	<p>What is Gemba.</p> <p>Lean management challenges leadership to go to the Gemba, the place where the work is being done, in order to become better leaders.</p>	[03]	CO3	L1									
(b)	<p>Differentiate between JIT and Lean management.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">S. N.</th> <th style="width: 35%;">Just in Time</th> <th style="width: 50%;">Lean manufacturing</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Advantages</td> <td> <ul style="list-style-type: none"> Reduced inventory Reduced work in progress Neither too early nor too late </td> <td> <ul style="list-style-type: none"> Reduced waste Increased productivity Improved efficiency Improved customer value </td> </tr> <tr> <td style="text-align: center;">Action areas</td> <td> <ul style="list-style-type: none"> Develop people by increasing their skills Optimize material handling and production flow Eliminate multiple location Reduce changeover times Reduce lot sizes </td> <td> <ul style="list-style-type: none"> Redesign the manufacturing system Reduce the machines setup Integrate a pull system Control the inventory Implement a vendor program </td> </tr> </tbody> </table>	S. N.	Just in Time	Lean manufacturing	Advantages	<ul style="list-style-type: none"> Reduced inventory Reduced work in progress Neither too early nor too late 	<ul style="list-style-type: none"> Reduced waste Increased productivity Improved efficiency Improved customer value 	Action areas	<ul style="list-style-type: none"> Develop people by increasing their skills Optimize material handling and production flow Eliminate multiple location Reduce changeover times Reduce lot sizes 	<ul style="list-style-type: none"> Redesign the manufacturing system Reduce the machines setup Integrate a pull system Control the inventory Implement a vendor program 	[07]	CO3	L2
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(c)	<p>Apply Kanban board concept to our placement process.</p> <ul style="list-style-type: none"> A Kanban board is a visualization tool that enables you to optimize the flow of your work. Using a Kanban board to manage work across your team or organization can: <ol style="list-style-type: none"> Promote focus Boost productivity Increase visibility 	[10]	CO5	L3									

Backlog	To Do ⁽²⁾	Face to Face ⁽³⁾		Technical test ⁽²⁾		Offer Accepted ⁽³⁾	
		Ongoing	Done	Ongoing	Done	Yes	No
F H I	G GY	D PB DE	C P1	E MN AB	B	A	

Part B - Compulsory (01*10=10marks)

4 Demonstrate that Kaizen cycle can be implemented to improve the standards and ranking of our institution by considering suitable parameters.

[10] CO5 L3



Course Outcomes		PO 1	PO 2	PO 3	PO 4	PO 5
CO1	Students should get clear idea about the concept of Strategic Management, its relevance, Characteristics, process nature and purpose.					
CO2	Student to acquire an understanding of how firms successfully institutionalize a strategy and create an organizational structure for domestic and overseas operations and gain competitive advantage.					
CO3	To give the students an insight on strategy at different levels of			1a,		

	an organization to gain competitive advantage.			1c,2b, 3a, 3b		
CO4	To help students understand the strategic drive in multinational firms and their decisions in different markets.					
CO5	To enable the students to gain knowledge of strategy implementation and the control measures for effective decision-making.			1b, 2a, 2c, 3c, 4		
Cognitive level	KEYWORDS					
L1	list, define, tell, recite, recall, identify, show, label, tabulate, quote, name, who, when, where, etc.					
L2	describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss					
L3	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify					
L4	classify, outline, break down, categorize, analyze, diagram, illustrate, infer, select					
L5	grade, test, measure, defend, recommend, convince, select, judge, support, conclude, argue, justify, compare, summarize, evaluate					
L6	design, formulate, build, invent, create, compose, generate, derive, modify, develop, integrate					
PO1–Theoretical Knowledge; PO2–Effective Communication Skills; PO3–Leadership Qualities; PO4 –Sustained Research Orientation; PO5 –Self-Sustaining Entrepreneurship						

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