



Name:	
Enrolment No:	

UPES

End Semester Examination, December 2023

Course: Lean Supply Chain Management
Program: MBA(LSCM)
Course Code: LSCM 8012P

Semester: III
Time : 03 hrs.
Max. Marks: 100

Instructions:

SECTION A
10Qx2M=20Marks

S. No.	Attempt all questions in this section	Marks	CO
Q 1	MCQ & fill in the blanks, carries equal marks		
(i)	Who developed 7 original types of wastes (Muda)? (a) Kiichiro Toyoda (b) Taiichi Ohno (c) Aiko Toyoda (d) None of the above	2	CO1
(ii)	Just in Time (JIT) means: - (a)Suppliers do not supply in time. (b) Workers arrive at work punctually (c)A lot of stock is kept meeting unforeseen demand. (d) Supplies are coordinated to arrive as they are needed.	2	CO1
(iii)	In 5S, the phrase "Seiton" means_____ (a) Sort (b) Set in order (c) Shine (d) None of the above	2	CO1
(iv)	Who does not signify the importance of people as a resource? (a) TPS (b) Lean (c) Both (a) & (b) (d) None of these	2	CO1
(v)	Genchi Genbutsu belongs to_____ (a) TPS (b) Lean (c) Mass Production (d) None of these	2	CO1
(vi)	OEE stands for_____ (a) Overall Equipment Effectiveness (b) Overall Equipment Efficiency	2	CO1

	(c) Overload Equipment Effectiveness (d) None of the above		
(vii)	The concept of SMED was developed by_____ (a) Kaoru Ishikawa (b) Genichi Taguchi (c) Shigeo Shingo (d) Masaaki Imai	2	CO1
(viii)	If takt time is 34.3 sec. & OEE is 88% what would be the cycle time.	2	CO1
(ix)	What is the full form of MSA.....	2	CO1
(x)	What is the other name of VSM.....?	2	CO1
SECTION B 4Qx5M= 20 Marks			
Q	Attempt all questions in this section		
2	Define (a) SMED (b) TPM	5	CO2
3	Discuss & compare lean principles vs TPS principles?	5	CO2
4	Define (a) little's law (b) model mix leveling?	5	CO2
5	Comment on the statement "Lean & TPS are same"	5	CO2
SECTION-C 3Qx10M=30 Marks			
Q	Attempt all questions in this section		CO5
6	Calculate the OEE for 31 st March 2023, where a plant runs for two shift of 12 hours each everyday & each shift has a break of 1 hour & 45 min. each for lunch & dinner & tea break. The scheduled preventive maintenance is 45 min. each day. The unscheduled downtime was 1 hour on 31st March 2023. The design cycle time is 45 seconds per piece & the total production was 3050 pieces with 70 rejected pieces on that day. Also predict the type of losses using OEE?	10	CO3
7	Discuss the various diagnostics tools used for Lean strategy implementation?	10	CO3
8	Describe Lean supply chain management & also what are the recommendations for implementation of lean supply chain? OR With reference to the article "World class manufacturing", discuss the WCM model & what are the process which integrates wcm with business planning?	10	CO3
SECTION-D 2Qx15M= 30 Marks			
Q	Read the case and attempt both questions		
	Orlando's Arnold Palmer Hospital, founded in 1989, specializes in treatment of women and children and is renowned for its high-quality rankings (top 10% of 2000 benchmarked hospitals), its labor and delivery		

volume (more than 14,000 births per year), and its neonatal intensive care unit (one of the highest survival rates in the nation). But quality medical practices and high patient satisfaction require costly inventory—some \$30 million per year and thousands of SKUs. With pressure on medical care to manage and reduce costs, Arnold Palmer Hospital has turned toward controlling its inventory with just-in-time (JIT) techniques. Within the hospital, for example, drugs are now distributed at the nursing stations via dispensing machines (almost like vending machines) that electronically track patient usage and post the related charge to each patient. Each night, based on patient demand and prescriptions written by doctors, the dispensing stations are refilled. To address JIT issues externally, Arnold Palmer Hospital turned to a major distribution partner, McKesson General Medical, which as a first-tier supplier provides the hospital with about one-quarter of all its medical/surgical inventory. McKesson supplies sponges, basins, towels, Mayo stand covers, syringes, and hundreds of other medical/surgical items. To ensure coordinated daily delivery of inventory purchased from McKesson, an account executive has been assigned to the hospital on a full-time basis, as well as two other individuals who address customer service and product issues. The result has been a drop in Central Supply average daily inventory from \$400,000 to \$114,000 since JIT. JIT success has also been achieved in the area of custom surgical packs. Custom surgical packs are the sterile coverings, disposable plastic trays, gauze, and the like, specialized to each type of surgical procedure. Arnold Palmer Hospital uses 10 different custom packs for various surgical procedures. “Over 50,000 packs are used each year, for a total cost of about \$1.5 million,” says George DeLong, head of Supply-Chain Management. The packs are not only delivered in a JIT manner, but packed that way as well. That is, they are packed in the reverse order they are used so each item comes out of the pack in the sequence it is needed. The packs are bulky, are expensive, and must remain sterile. Reducing the inventory and handling while maintaining an ensured sterile supply for scheduled surgeries presents a challenge to hospitals. Here is how the supply chain works: Custom packs are assembled by a packing company with components supplied primarily from manufacturers selected by the hospital, and delivered by McKesson from its local warehouse. Arnold Palmer Hospital works with its own surgical staff (through the Medical Economics Outcome Committee) to identify and standardize the custom packs to reduce the number of custom pack SKUs. With this integrated system, pack safety stock inventory has been cut to one day. The procedure to drive the custom surgical pack JIT system begins with a “pull” from the doctors’ daily surgical schedule. Then, Arnold Palmer Hospital initiates an electronic order to McKesson between 1:00 and 2:00 p.m. daily. At 4:00 a.m. the next day, McKesson delivers the packs. Hospital personnel arrive at 7:00 a.m. and stock the shelves for scheduled surgeries. McKesson then reorders from the packing company, which in turn “pulls” necessary inventory for the quantity of packs needed from the manufacturers. Arnold

	Palmer Hospital's JIT system reduces inventory investment, expensive traditional ordering, and bulky storage and supports quality with a sterile delivery.		
9	What do you recommend be done when an error is found in a pack as it is opened for an operation? & How might the procedure for custom surgical packs described here be improved?	15	CO4
10	When discussing JIT in services, the text notes that suppliers, layout, inventory, and scheduling are all used. Provide an example of each of these at Arnold Palmer Hospital	15	CO4