



62235

Reg. No.

--	--	--	--	--	--	--	--

III Semester M.B.A. (Day & Eve.) Degree Examination, March/April - 2022**MANAGEMENT****Agile & Lean Manufacturing
(CBCS Scheme 2019 onwards)****Paper : 3.6.2****Time : 3 Hours****Maximum Marks : 70****SECTION - A**Answer any **five** questions from the following each question carries **5** marks. **(5×5=25)**

1. Briefly explain the concept of project storyboard.
2. Write short notes on closed loop system.
3. Explain the concept of 'value' in lean and agile environment.
4. Differentiate between sprint review and sprint retrospective.
5. List any four principles of value stream mapping.
6. Bring out the differences between lean and green manufacturing.
7. Briefly explain the 5S principles.

SECTION - BAnswer any **three** questions from the following, each question carries **10** marks. **(3×10=30)**

8. What is Jidoka? Explain the principles of Jidoka with reference to Toyota Production systems?
9. Differentiate between product backlog and sprint backlog. Explain how stakeholders and product owners view them?
10. Elucidate the pillars of Total Productive maintenance.
11. Write a brief note on the three toolboxes for lean manufacturing.

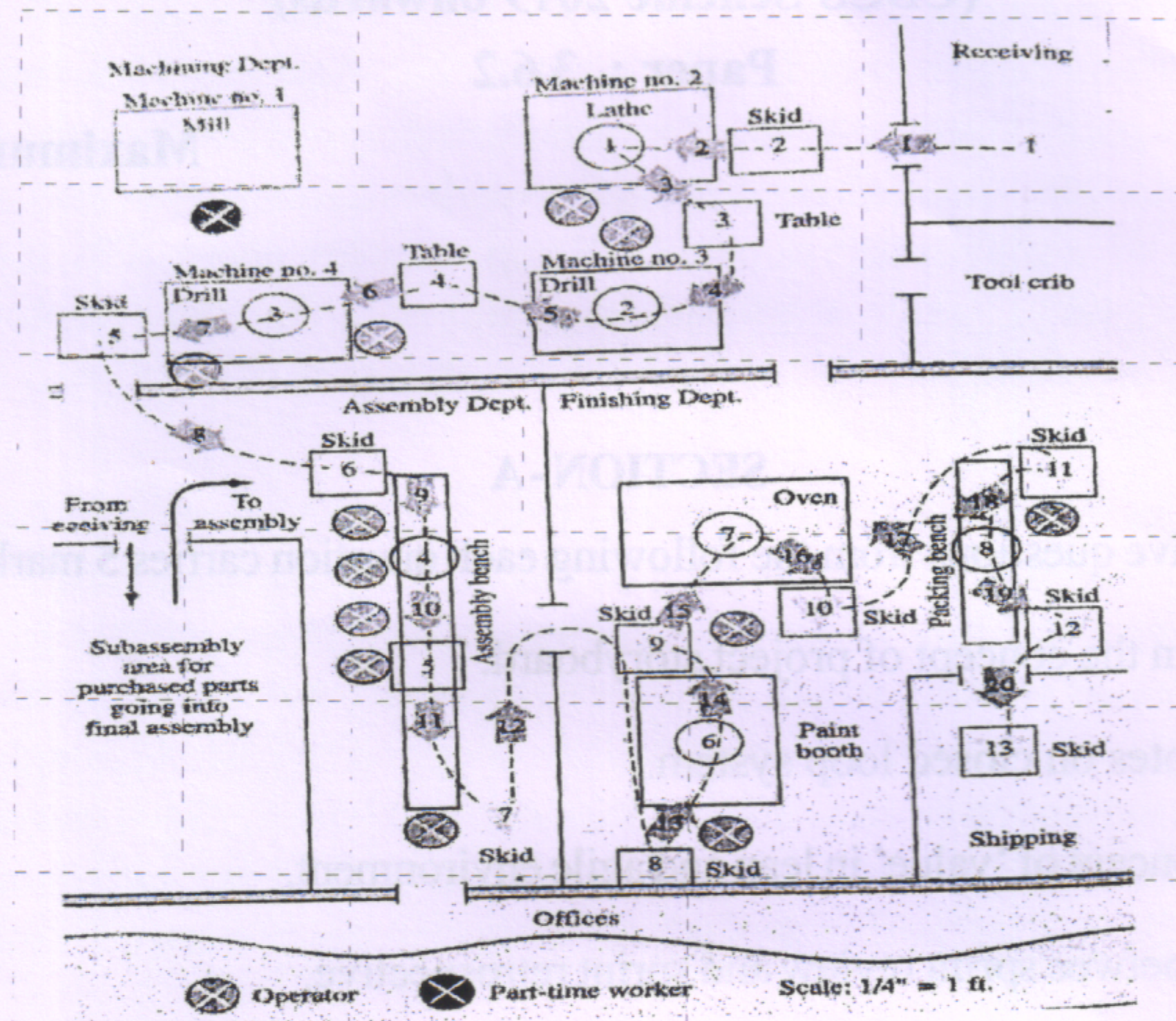
[P.T.O.]



12. Compulsory Case study:

(1×15=15)

Quality parts company supplies Gizmos for a computer manufacturer located a few miles away. The company produces two different models of gizmos in production runs ranging from 100 to 300 units. The production flow of models X & Y is shown in the image below:



Model Z requires milling as its first step, but otherwise follows the same flow pattern as X and Y. Skids can hold upto 20 gizmos at a time. Approximate times per unit by operation number and equipment setup times are shown in the below image

Operation Number and Name		Operation time (Minutes)	Setup time (Minutes)
Milling for Model Z		20	60
1	Lathe	50	30
2	Mod. 14 drill	15	5
3	Mod. 14 drill	40	5
4	Assembly step 1	50	
	Assembly step 2	45	
	Assembly step 3	50	



5	Inspection	30	
6	Paint	30	20
7	Oven	50	
8	Packing	5	

Demand for gizmos from the computer company ranges between 125 and 175 per month, equally divided among X, Y and Z. Subassembly builds inventory early in the month to make certain that a buffer stock is always available. Raw materials and purchase parts sub assemblies each constitute 40% of the manufacturing cost of the gizmo. Both categories of parts are multiple - sourced from about 80 vendors and are delivered at random times (gizmos have 40 different part numbers). Scrap rates are about 10% at each operation, inventory turns twice yearly, employees are paid on a day rate, employee turnover is 25% per year and net profit from operations is steady at 5% per year. Maintenance is performed as needed.

The manager of quality parts company has been contemplating installing an automated ordering system to help control inventories and to "keep the skids filled". (She feels that two days of work in front of the workstation motivates the worker to produce at top speed)/ She is also planning to add 3 inspectors to clean up the quality problem. Further, she is thinking about setting up a rework line to speed repairs. Although she is pleased with the high utilization of most of the equipment and labor, she is concerned about the idle time of the milling machine. Finally, she has asked the industrial engineering department to look into high - rise shelving to store parts coming off machine 4.

Questions :

1. Which of the changes being considered by the manager of the Quality parts company are counter to the lean philosophy?
2. Make recommendations for lean improvements in such areas as scheduling, layout, Kanban, task groupage and inventory. Use quantitative data as much as possible and state necessary assumptions.
3. Sketch the operation of a pull system for running Quality part company's current system.
4. Outline a plan for introducing lean at Quality parts company.