

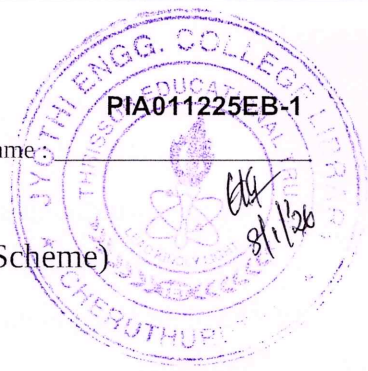
Reg No.: _____

Name: _____

PIA011225EB-1



Jyothi Engineering College(Autonomous)
M.Tech Degree S1 (R) Examination, December 2025 (2025 Scheme)



25PIAT121- PRODUCTION AND OPERATIONS
MANAGEMENT

Total Mark: 60

Total Time: 2hr 30min
CO MARK

PART A

Answer All Questions

1. Illustrate different demand patterns with graphical representation and examples. CO1 (5)
2. Explain Master Production Scheduling (MPS) and discuss any two MPS techniques along with time fencing and MPS stability. CO2 (5)
3. Describe the key functional units of ERP and explain how performance measures help evaluate ERP effectiveness in material flow, lead time, and decision-making. CO3 (5)
4. What is the purpose of computerized layout planning? Briefly differentiate between ALDEP and CRAFT. CO4 (5)
5. What is SERVQUAL? Briefly explain how it is used to measure service quality. CO5 (5)

PART B

Answer Any Five Question(s)

6. The sales particulars of a company for 13 years of operation is furnished below.
 - a. Fit a simple regression for the above data using method of least squares. CO1 (7)
 - b. Forecast the sales for the 14th and 15th years of operation.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13
Lumber Sales	96	116	119	127	146	145	153	158	160	165	177	190	205

7. Explain how Sales and Operations Planning (SOP) integrate different business functions and how it improves forecast accuracy and resource utilization. CO2 (7)
8. Discuss different lot-sizing methods used in MRP and compare their suitability in terms of cost, inventory holding, and responsiveness to demand fluctuations. CO3 (7)
9. Consider the following flow shop scheduling problem. Using Johnson's algorithm,
 - i. Find the optimal sequence which will minimize make span. CO4 (7)
 - ii. Find idle time on Machine 1 and Machine 2.
 - iii. Also plot the Gantt Chart.

Job (j)	1	2	3	4	5
Machine 1	7	1	15	8	11
Machine 2	8	4	12	5	6

10. Explain Kaizen and Benchmarking. How do both contribute to continuous improvement in manufacturing. CO5 (7)
11. Explain the measures used to evaluate forecast accuracy in demand forecasting, with the help of an example. CO1 (7)
12. Explain line balancing and list the major steps involved in balancing an assembly line. CO4 (7)
