SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF MANAGEMENT STUDIES

QUESTION BANK

II SEMESTER

BA3265 – OPERATIONS MANAGEMENT

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Prepared by

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UNIT – I – INTRODUCTION TO OPERATIONS MANAGEMENT				
SYLLABUS: Introduction to Operations Management, Nature, Importance, Functions, Recent Trends - Implication of Operations Function (Strategy) in a Firm; Challenges in International Operations Management; Examples of World class manufacturing Practices. Productivity; Relationship of production with other Principles of Management - SCM & Functions				
PART- A				
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Define Operations management.	CO1	Level 1	Remembering
2.	Relate the components of a production system.	CO1	Level 2	Understanding
3.	What are the functions of an operations manager?	CO1	Level 1	Remembering
4.	Interpret the importance of operations in manufacturing.	CO1	Level 2	Understanding
5.	Outline the objectives of operation management.	CO1	Level 2	Understanding
6.	What are the challenges in operations management?	CO1	Level 1	Remembering
7.	Compare Goods and Services.	CO1	Level 2	Understanding
8.	What is meant by Lean Manufacturing?	CO1	Level 1	Remembering
9.	Outline the recent trends in Operations Management.	CO1	Level 2	Understanding
10.	What is meant by operations strategy?	CO1	Level 1	Remembering
11.	Write the scope of Operations Management.	CO1	Level 1	Remembering
12.	Infer the nature of Operations Management.	CO1	Level 2	Understanding
13.	Recall the challenges in Operations Management.	CO1	Level 1	Remembering
14.	Interpret the challenges in international Operations Management	CO1	Level 2	Understanding
15.	What is meant by Supply Chain Management?	CO1	Level 1	Remembering
16.	Interpret the objectives of Supply Chain Management	CO1	Level 2	Understanding
17.	List the functions of Supply Chain Management.	CO1	Level 1	Remembering
18.	Infer the importance of Supply Chain.	CO1	Level 2	Understanding
19.	What is meant by World Class Manufacturing?	CO1	Level 1	Remembering
20.	Infer the factors influencing productivity.	CO1	Level 2	Understanding
21.	What is meant by Productivity?	CO1	Level 1	Remembering
22.	Infer the issues in supply chain management.	CO1	Level 2	Understanding

23.	What is meant by strategy fit?	CO1	Level 1	Remembering
24.	Interpret the elements of operations strategy.	CO1	Level 2	Understanding

PART- B				
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Identify the historical development in the field of operations management.	CO1	Level 3	Applying
2.	Analyze the nature and scope of operations management.	CO1	Level 4	Analysing
3.	Elucidate the objectives and problems of operations management.	CO1	Level 3	Applying
4.	Examine the systems perspective of operations management.	CO1	Level 4	Analysing
5.	Determine the functions and challenges of operations management.	CO1	Level 3	Applying
6.	Categorize the types of production system.	CO1	Level 4	Analysing
7.	Determine the recent trends in operations management.	CO1	Level 3	Applying
8.	Examine the transformation process in operations management with an example.	CO1	Level 4	Analysing
9.	Identify the strategic fit of operations management in manufacturing organisations.	CO1	Level 3	Applying
10.	Examine the importance and issues in SCM.	CO1	Level 4	Analysing
11.	“Operations Strategies provide the road map for achieving the operations objectives.” – Justify the statement.	CO1	Level 3	Applying
12.	Analyze the challenges in International Operations Management.	CO1	Level 4	Analysing
13.	Identify measures of productivity and suggest methods to improve productivity in organizations.	CO1	Level 3	Applying
14.	Examine the core supply chain processes in detail.	CO1	Level 4	Analysing
15.	Identify the relationship of production with other Principles of Management.	CO1	Level 3	Applying
16.	Examine the objectives and functions of SCM.	CO1	Level 4	Analysing
17.	Identify three different sectors of your choice and compare the World class manufacturing Practices.	CO1	Level 3	Applying

UNIT – II – OPERATIONS AND THE VALUE CHAIN

SYLLABUS:

Capacity Planning – Long range, Types, Developing capacity alternatives, tools for capacity planning. Facility Location – Theories, Steps in Selection, Location Models. Sourcing and procurement - Strategic sourcing, make or buy decision, procurement process, managing vendors.

PART- A

S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	Define Capacity Planning.	CO2	Level 1	Remembering
2.	Differentiate RCCP and CRP.	CO2	Level 2	Understanding
3.	Write down the need of Capacity Planning.	CO2	Level 1	Remembering
4.	Interpret the various types of Capacity Planning.	CO2	Level 2	Understanding
5.	Outline the importance of Capacity Planning.	CO2	Level 2	Understanding
6.	Recall the factors affecting Capacity Planning.	CO2	Level 1	Remembering
7.	Infer the techniques of vendor rating.	CO2	Level 2	Understanding
8.	What is meant by Strategic sourcing?	CO2	Level 1	Remembering
9.	Interpret the criteria for vendor rating.	CO2	Level 2	Understanding
10.	Write a brief note on Facility Location.	CO2	Level 1	Remembering
11.	Recall the concept of Location theory.	CO2	Level 1	Remembering
12.	Outline the types of Facility Location.	CO2	Level 2	Understanding
13.	State the importance Facility Location.	CO2	Level 1	Remembering
14.	Interpret the few location models.	CO2	Level 2	Understanding
15.	Recall the term make or buy decision.	CO2	Level 1	Remembering
16.	Interpret the factors affecting facility location decision.	CO2	Level 2	Understanding
17.	Define Facility Location.	CO2	Level 1	Remembering
18.	Interpret the importance of Vendor rating.	CO2	Level 2	Understanding
19.	What do you mean Vendor rating?	CO2	Level 1	Remembering
20.	Interpret the criteria for selection of vendors.	CO2	Level 2	Understanding
21.	Write a short note on procurement process.	CO2	Level 1	Remembering
22.	Infer the need for selection of location.	CO2	Level 2	Understanding
23.	Recall the term procurement.	CO2	Level 1	Remembering
24.	Outline the forecasting of future capacity needs.	CO2	Level 2	Understanding

<table>
<tr><th colspan="5">PART- B</th></tr>
<tr><th>S.NO</th><th>QUESTIONS</th><th>CO LEVEL</th><th>BT LEVEL</th><th>COMPETENCE</th></tr>
<tr><td>1.</td><td>Identify the various types of capacity in detail.</td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>2.</td><td>Classify the level of capacity planning and factors affecting capacity planning.</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
<tr><td>3.</td><td>Explain the types of facility location.</td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>4.</td><td>Classify the different types of capacity planning.</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
<tr><td>5.</td><td>(i) Explain the capacity planning process in detail. (10 mark)
(ii) A manufacturer of TV buys TV cabinet at Rs. 500 each. In case the company makes it within the factory, the fixed and variable costs would be Rs. 4,00,000 and Rs. 300 per cabinet respectively. Should the manufacturer make or buy the cabinet if the demand is 1,500 TV cabinets? (6 mark)</td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>6.</td><td>Classify the techniques of vendor rating.</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
<tr><td>7.</td><td>Explain the Developing capacity alternatives.</td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>8.</td><td>Classify the tools used for capacity planning</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
<tr><td>9.</td><td>Explain the need and importance of facility location</td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>10.</td><td>Examine the location theory and classify the types of facility location.</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
<tr><td>11.</td><td>Explain the different facility location models.</td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>12.</td><td>Examine the criteria for selection of vendors.</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
<tr><td>13.</td><td>An item has a yearly demand of 2,000 units. The different costs in respect of make and buy are as follows. Determine the best option.
<table>
<tr><td>Particulars</td><td>Buy</td><td>Make</td></tr>
<tr><td>Item cost /unit</td><td>Rs 8</td><td>Rs 5</td></tr>
<tr><td>Procurement cost / order</td><td>Rs 120</td><td></td></tr>
<tr><td>Set-up cost / set-up</td><td></td><td>Rs 60</td></tr>
<tr><td>Annual carrying cost / item / year</td><td>Rs 1.60</td><td>Rs 1.00</td></tr>
<tr><td>Production rate / year</td><td></td><td>8000 units</td></tr>
</table></td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>14.</td><td>Examine the steps in strategic sourcing process.</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
<tr><td>15.</td><td>(i) Explain the Criteria for make or buy. (8 mark)
(ii) Explain the procurement process. (8 mark)</td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
<tr><td>16.</td><td>(i) A company has extra capacity that can be used to produce a sophisticated fixture which it has been buying for Rs. 900 each. If the company makes the fixtures, it will incur materials cost of Rs. 300 per unit, labour costs of Rs. 250 per unit, and variable overhead costs of Rs. 100 per unit. The annual fixed cost associated with the unused capacity is Rs. 10,00,000. Demand over the next year is estimated at 5,000 units. Would it be</td><td>CO2</td><td>Level 4</td><td>Analysing</td></tr>
</table>

<table>
<tr><td></td><td>profitable for the company to make the fixtures? (8 mark)

(ii) List the Approaches for make or buy decision. (8 mark)</td><td></td><td></td><td></td></tr>
<tr><td>17.</td><td>There are three alternatives available to meet the demand of a particular product. They are as follows:
(a) Manufacturing the product by using process A
(b) Manufacturing the product by using process B (c) Buying the product The details are as given in the following table:
The annual demand of the product is 8,000 units. Should the company make the product using process A or process B or buy it?
<table>
<tr><td>Cost elements</td><td>Manufacturing the product by process A</td><td>Manufacturing the product by process B</td><td>Buy</td></tr>
<tr><td>Fixed cost/year (Rs.)</td><td>5,00,000</td><td>6,00,000</td><td></td></tr>
<tr><td>Variable/unit (Rs.)</td><td>175</td><td>150</td><td></td></tr>
<tr><td>Purchase price/unit (Rs.)</td><td></td><td></td><td>125</td></tr>
</table></td><td>CO2</td><td>Level 3</td><td>Applying</td></tr>
</table>

<table>
<tr><th colspan="5">UNIT – III – DESIGN OPERATIONS</th></tr>
<tr><td colspan="5">SYLLABUS:
Product Design - Criteria, Approaches. Product development process - stage-gate approach - tools for efficient development. Process - design, strategy, types, analysis. Facility Layout – Principles, Types, Planning tools and techniques.</td></tr>
<tr><td></td><td colspan="4">PART- A</td></tr>
<tr><th>S.NO</th><th>QUESTIONS</th><th>CO LEVEL</th><th>BT LEVEL</th><th>COMPETENCE</th></tr>
<tr><td>1.</td><td>Define Product Design.</td><td>CO3</td><td>Level 1</td><td>Remembering</td></tr>
<tr><td>2.</td><td>Infer the characteristics of Product Design.</td><td>CO3</td><td>Level 2</td><td>Understanding</td></tr>
<tr><td>3.</td><td>List the approaches to Product Design.</td><td>CO3</td><td>Level 1</td><td>Remembering</td></tr>
<tr><td>4.</td><td>Interpret the various types of Product Design.</td><td>CO3</td><td>Level 2</td><td>Understanding</td></tr>
<tr><td>5.</td><td>Interpret the objectives of Product Design.</td><td>CO3</td><td>Level 2</td><td>Understanding</td></tr>
<tr><td>6.</td><td>state the factors influencing of Product Design.</td><td>CO3</td><td>Level 1</td><td>Remembering</td></tr>
<tr><td>7.</td><td>Infer the techniques of Product development.</td><td>CO3</td><td>Level 2</td><td>Understanding</td></tr>
<tr><td>8.</td><td>What is meant by Product development?</td><td>CO3</td><td>Level 1</td><td>Remembering</td></tr>
<tr><td>9.</td><td>Infer the legal issues in Product Design.</td><td>CO3</td><td>Level 2</td><td>Understanding</td></tr>
<tr><td>10.</td><td>Write a brief note on process design.</td><td>CO3</td><td>Level 1</td><td>Remembering</td></tr>
<tr><td>11.</td><td>State the ethical issues in Product Design.</td><td>CO3</td><td>Level 1</td><td>Remembering</td></tr>
</table>

12.	Infer the benefits of Product development.	CO3	Level 2	Understanding
13.	Recall the environmental issues in Product Design.	CO3	Level 1	Remembering
14.	Interpret the factors affecting process design decisions.	CO3	Level 2	Understanding
15.	Define Plant layout / Facility layout.	CO3	Level 1	Remembering
16.	Infer the types of Product Design.	CO3	Level 2	Understanding
17.	Define Group Technology.	CO3	Level 1	Remembering
18.	Interpret the objectives of Facility layout.	CO3	Level 2	Understanding
19.	Recall the term ALDEP.	CO3	Level 1	Remembering
20.	Interpret the types of Facility layout.	CO3	Level 2	Understanding
21.	What are planning tools?	CO3	Level 1	Remembering
22.	Interpret the factors influencing layout changes.	CO3	Level 2	Understanding
23.	Recall the term CALP.	CO3	Level 1	Remembering
24.	Compare fixed position layout and product line layout.	CO3	Level 2	Understanding

PART- B				
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Identify the types and approaches to Product Design.	CO3	Level 3	Applying
2.	Examine the characteristics and factors influencing of good Product Design.	CO3	Level 4	Analysing
3.	Identify on the issues faced in Product Design.	CO3	Level 3	Applying
4.	Analyze the generic Product development process.	CO3	Level 4	Analysing
5.	Explain the techniques of Product development.	CO3	Level 3	Applying
6.	Classify the tools for efficient product development.	CO3	Level 4	Analysing
7.	Explain the types of process design.	CO3	Level 3	Applying
8.	(i) Classify the major decisions in process design. (8 mark) (ii) Analyze the factors affecting process design decisions. (8 mark)	CO3	Level 4	Analysing
9.	Identify the factors influencing layout changes.	CO3	Level 3	Applying
10.	Analyze the various planning tools and techniques of layout.	CO3	Level 4	Analysing
11.	Identify the different types of facility layout.	CO3	Level 3	Applying
12.	Analyze the objectives and importance of facility layout.	CO3	Level 4	Analysing

13.	Elucidate the Flexible Manufacturing System (FMS).	CO3	Level 3	Applying
14.	Compare fixed position layout and product (line) layout.	CO3	Level 4	Analysing
15.	Explain the various stages involved in developing a product.	CO3	Level 3	Applying
16.	Compare Process (Functional) layout and Cellular (GT) layout.	CO3	Level 4	Analysing
17.	Analyze the procedure to be adopted in the New Product Development process with a suitable example.	CO3	Level 3	Applying

UNIT – IV – PLANNING AND CONTROL OF OPERATIONS

SYLLABUS:

Demand Forecasting – Need, Types, Objectives and Steps - Overview of Qualitative and Quantitative methods. Operations planning - Resource planning - Inventory Planning and Control. Operations Scheduling - Theory of constraints - bottlenecks, capacity constrained resources, synchronous manufacturing.

PART- A

S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	Define Demand forecasting.	CO4	Level 1	Remembering
2.	Infer the need of Demand forecasting.	CO4	Level 2	Understanding
3.	List the types of Demand forecasting.	CO4	Level 1	Remembering
4.	Interpret the objectives of Demand forecasting.	CO4	Level 2	Understanding
5.	Interpret the steps involved in Demand forecasting.	CO4	Level 2	Understanding
6.	What is Delphi technique?	CO4	Level 1	Remembering
7.	Infer the qualitative methods of Demand forecasting.	CO4	Level 2	Understanding
8.	What is meant by scheduling?	CO4	Level 1	Remembering
9.	Name the components in inventory costs.	CO4	Level 2	Understanding
10.	Write down the quantitative methods of Demand forecasting.	CO4	Level 1	Remembering
11.	Define Economic order quantity.	CO4	Level 1	Remembering
12.	Interpret the functions of inventory.	CO4	Level 2	Understanding
13.	Recall the types of costs in inventory.	CO4	Level 1	Remembering
14.	Infer the benefits of Master production schedule?	CO4	Level 2	Understanding
15.	What is meant by operations planning?	CO4	Level 1	Remembering
16.	Infer the term Resource planning.	CO4	Level 2	Understanding
17.	Write short notes on theory of constraints.	CO4	Level 1	Remembering
18.	Infer the objectives in scheduling.	CO4	Level 2	Understanding

19.	Write short notes on priority rules.	CO4	Level 1	Remembering
20.	Infer the objectives synchronous manufacturing.	CO4	Level 2	Understanding
21.	What is operational scheduling?	CO4	Level 1	Remembering
22.	Infer the significance of demand forecasting.	CO4	Level 2	Understanding
23.	Write a short note on synchronous manufacturing.	CO4	Level 1	Remembering
24.	Compare finite and infinite scheduling.	CO4	Level 2	Understanding

PART- B				
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Identify the qualitative forecast methods.	CO4	Level 3	Applying
2.	Classify the types in quantitative forecast methods.	CO4	Level 4	Analysing
3.	Identify the steps in the forecasting process.	CO4	Level 3	Applying
4.	Examine the need and objectives of demand forecasting.	CO4	Level 4	Analysing
5.	(i) Explain the measures of forecasting accuracy. (10 marks) (ii) From the following information, find out the EOQ and total variable cost associated with the ordering policy: Annual demand (D) Rs 50000 Ordering cost (O) Rs 200 per order Inventory carrying cost 40% of average inventory value. (6 marks)	CO4	Level 3	Applying
6.	Examine the concept of EOQ Model with neat graphical presentation.	CO4	Level 4	Analysing
7.	Classify the various levels of stocks in detail.	CO4	Level 3	Applying
8.	Examine the need and elements of inventory.	CO4	Level 4	Analysing
9.	Explain the economic order quantity model.	CO4	Level 3	Applying
10.	Analyze the types of demand forecasting and significance in detail.	CO4	Level 4	Analysing
11.	Elucidate the following (i) Why do companies want to hold inventories? (ii) Why do companies not want to hold inventories?	CO4	Level 3	Applying
12.	Analyze the different types of Inventory.	CO4	Level 4	Analysing
13.	Identify the inventory control techniques in detail.	CO4	Level 3	Applying
14.	Analyze the objective and functions of Operations Scheduling	CO4	Level 4	Analysing
15.	Identify the techniques of inventory control.	CO4	Level 3	Applying
16.	Examine the theory of constraints in scheduling.	CO4	Level 4	Analysing

17.	In manufacturing company, a material is used as follows: Maximum consumption 24000 units per week Minimum consumption 8000 units per week Normal consumption 16000 units per week Reorder quantity 96000 units Time required for delivery – minimum – 4 weeks maximum – 6 weeks emergency period = 2 weeks Calculate: • Reorder level • Minimum level • Maximum level • Danger level	CO4	Level 3	Applying

UNIT – V – PROJECT MANAGEMENT AND LEAN MANUFACTURING				
SYLLABUS: Project Management – Nature, Constraints in Projects, Project Life Cycle. Evolution of Lean Manufacturing – Lean Principles – Framework of Lean Processes - Lean Production - 7 hidden wastes – Lean and Green Manufacturing. Overview of JIT.				
PART- A				
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Define Project management.	CO5	Level 1	Remembering
2.	Infer the objectives of Project management.	CO5	Level 2	Understanding
3.	List the six key decisions in project management.	CO5	Level 1	Remembering
4.	Difference between Resource levelling and Resource allocation.	CO5	Level 2	Understanding
5.	Infer the importance of Critical path method.	CO5	Level 2	Understanding
6.	Give a general description of the network diagram.	CO5	Level 1	Remembering
7.	Infer the benefits of green manufacturing	CO5	Level 2	Understanding
8.	What is green manufacturing?	CO5	Level 1	Remembering
9.	List the functions of Project management.	CO5	Level 2	Understanding
10.	List the process of Project management.	CO5	Level 1	Remembering
11.	State the tools of Project management.	CO5	Level 1	Remembering
12.	Infer the importance of Project management.	CO5	Level 2	Understanding
13.	List the disadvantages of Project management.	CO5	Level 1	Remembering
14.	Outline the importance of critical chain project management.	CO5	Level 2	Understanding

15.	Write short notes on Project management software.	CO5	Level 1	Remembering
16.	List the eight types of waste in JIT.	CO5	Level 2	Understanding
17.	What is lean manufacturing?	CO5	Level 1	Remembering
18.	Give short notes on the functions of JIT.	CO5	Level 2	Understanding
19.	List the characteristics of lean systems.	CO5	Level 1	Remembering
20.	What is takt time?	CO5	Level 2	Understanding
21.	Recall the benefits of Project management.	CO5	Level 1	Remembering
22.	State the benefits of lean manufacturing.	CO5	Level 2	Understanding
23.	What is Kanban and mention it types?	CO5	Level 1	Remembering
24.	Write a short note on JIT.	CO5	Level 2	Understanding

PART- B				
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Identify the objectives and functions of Project Management.	CO5	Level 3	Applying
2.	Examine the behavioral aspects of projects in terms of project personnel and the project manager.	CO5	Level 4	Analysing
3.	Determine the techniques of resource planning in Project Management.	CO5	Level 3	Applying
4.	Analyze the stages of the project life cycle with suitable illustration.	CO5	Level 4	Analysing
5.	Explain the different phases of project management.	CO5	Level 3	Applying
6.	Examine the importance of project management is different from general operations management.	CO5	Level 4	Analysing
7.	Explain the tools and techniques of project management.	CO5	Level 3	Applying
8.	Categorize the key lean improvement tools.	CO5	Level 4	Analysing
9.	Explain the Green manufacturing process.	CO5	Level 3	Applying
10.	(i) Elaborate the green manufacturing application areas. (8 marks) (ii) classify the benefits of green manufacturing. (8 marks)	CO5	Level 4	Analysing
11.	Identify the benefits and risks of lean systems.	CO5	Level 3	Applying
12.	Analyze the three goals of a lean system and explain the importance of each.	CO5	Level 4	Analysing
13.	Elucidate the Product and process design building blocks of a lean production system.	CO5	Level 3	Applying
14.	Classify the seven hidden types of wastes.	CO5	Level 4	Analysing

15.	Elucidate the elements of lean production	CO5	Level 3	Applying
16.	Examine the eight wastes according to lean philosophy.	CO5	Level 4	Analysing
17.	Explain the lean principles in detail.	CO5	Level 3	Applying