

**VPM's  
DR VN BRIMS, Thane  
Programme: MMS (2020-22)  
Fourth Semester Examination May 2022**

<b>Course Name</b>	Operations Applications and Cases	<b>Course Code</b>	MMS-O405
<b>Roll No.</b>		<b>Marks</b>	60
<b>Total No. of Questions</b>	35	<b>Duration</b>	3 Hours
<b>Total No. of printed pages</b>	6	<b>Date</b>	18.05.2022

**Course Outcome Statements:**

- CO1. DESCRIBE** the Key Concepts and Definitions associated with operations Applications.  
**CO2. SUMMARIZE** the features of various frameworks used in processes and operations of the product & service industry.  
**CO3. APPLY** various techniques, tools & practices in different situations for executing the system in the best manner.  
**CO4. EXAMINE** the concepts of operations using process analysis, MRP, Vendor selection, and vendor management for effective implementation.  
**CO5. EXPLAIN** how what-if analysis is used to have an optimum solution.

**Instructions: -**

**Section I**

**Q1 (All Questions are Compulsory) From Q2 To Q5 Attempt Any three questions**

**Section II**

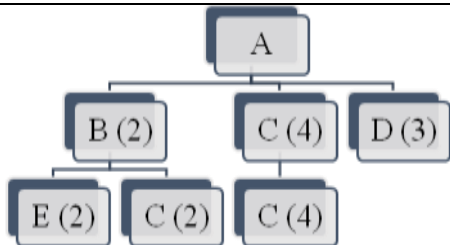
**All 30 Multiple Choice Questions are compulsory**

**SECTION I**

Q. No.	Questions	Marks	BL	CO
<b>Q1</b>	<b>Case/Case-let Study (500-800 words)</b>			
	A two-wheeler component manufacturing unit uses large quantities of a component made of steel. Although these are production items, the demand is continuous and inventory planning could be done independent of the production plan. The annual demand for the component is 2,500 boxes. The company procures the item from a supplier at the rate of Rs. 750 per box. The company estimates the cost of carrying inventory to be percent per unit per annum and the cost of ordering as Rs.1080 per order. The company works for 250 days in a year.			
<b>a.</b>	Develop an inventory control system by finding EOQ.	<b>2</b>	<b>Level 3</b>	<b>CO3</b>
<b>b.</b>	Analysing the above system, examine the time between orders	<b>5</b>	<b>Level 4</b>	<b>CO4</b>
<b>c.</b>	Estimate the overall cost of the plan.	<b>2</b>	<b>Level 5</b>	<b>CO5</b>

**Attempt any THREE questions out of four questions below:**

<b>Q2</b>	Consider below the product structure of a product manufactured by Oriental Housings & Seals. The numbers n parentheses in the below figure indicate the number of units of the item required to assemble one unit of its parent. Use the information available in the product structure to answer the following questions:			
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	<b>a.</b>	<b>Analyze</b> given information to compute units of C required to manufacture one unit of Product A	<b>3</b>	<b>Level 4</b>	<b>CO4</b>										
	<b>b.</b>	<b>Determine</b> the inventory of each component is required for satisfying a demand of 100 units of the final product if: i. There is no stock of finished goods ii. There is a stock of 30 units of the final product?	<b>4</b>	<b>Level 5</b>	<b>CO5</b>										
<b>Q3</b>	<b>a.</b>	<b>Distinguish</b> MRP I & MRP II. Examine the additional advantages that an organization will obtain by using an MRP II System.	<b>3</b>	<b>Level 4</b>	<b>CO4</b>										
	<b>b.</b>	“An organization plans the requirements for dependent demand items differently from that of an item with independent demand” <b>Justify</b> this scenario with a suitable example.	<b>4</b>	<b>Level 5</b>	<b>CO5</b>										
<b>Q4</b>		<p>A TATA Motors car plant manufactures several car models.</p> <ul style="list-style-type: none"> <li>The plant can produce 20 cars per quarter for each worker</li> <li>Workers receive Rs. 1200000 per quarter</li> <li>It costs Rs. 7000 to hire and train a new worker and Rs. 10000 to layoff</li> <li>Now has 450 workers on staff and 1800 cars in inventory from the start</li> <li>Any car inventory at the end of a quarter has a holding cost of Rs. 1000</li> </ul> <table border="1"> <thead> <tr> <th>Quarter</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Demand – No. Of Cars</td> <td>9500</td> <td>12000</td> <td>8800</td> <td>13000</td> </tr> </tbody> </table>	Quarter	1	2	3	4	Demand – No. Of Cars	9500	12000	8800	13000			
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	<b>a.</b>	<b>Examine</b> an aggregate plan for the next four quarters using the chase strategy	<b>3</b>	<b>Level 4</b>	<b>CO4</b>										
	<b>b.</b>	<b>Evaluate</b> an aggregate plan for the next four quarters using chase strategy and level strategy concerning their cost.	<b>4</b>	<b>Level 5</b>	<b>CO5</b>										
<b>Q5</b>	<b>a.</b>	Assume that you are a garment manufacturer. Your recent production rate is 2000pices per day. If you want to increase it to 30000 per day, examine the problems do you predict in making this change?	<b>3</b>	<b>Level 4</b>	<b>CO4</b>										
	<b>b.</b>	Determine aggregate operations planning impact on the following functional areas n an organization: i. Marketing ii. Finance iii. Strategy iv. Materials & procurement	<b>4</b>	<b>Level 5</b>	<b>CO5</b>										

**SECTION II**

All Questions are compulsory

Q. No.	Question Statement	Option 1	Option 2	Option 3	Option 4	Marks	BL	CO
MCQ 1	Capacity decisions have a direct influence on the performance of the production system in respect of _____	Delivery performance	Quality control	Plant size	Manpower	1	Level 1	CO1
MCQ 2	The lead-time is the time:	To place holders for materials	Time of receiving materials	The time between receipt of material and using materials	The time between placing the order and receiving the materials	1	Level 1	CO1
MCQ 3	One of the important charts used in program control is:	Material chart	Gantt chart	Route chart	Inspection chart	1	Level 1	CO1
MCQ 4	The first stage in production planning is:	Process planning	Factory planning	Operation planning	Layout planning	1	Level 1	CO1
MCQ 5	The example of worker involvement, as a recent trend in production/operations management is	SCM	Just-in-Time	Quality Circle	MRP	1	Level 1	CO1
MCQ 6	An important factor in forecasting production is:	Environmental changes	Available capacity of machines	Disposable income of the consumer	Changes in the preference of the consumer	1	Level 1	CO1
MCQ 7	One of the important basic objectives of Inventory management is:	To calculate EOQ for all materials in the organization	To go in person to the market and purchase the materials	To employ the available capital efficiently to yield maximum results	Once materials are issued to the departments, personally check how they are used.	1	Level 1	CO1
MCQ 8	When work centers are used in optimal sequence to do the jobs, we can:	Minimize the setup a time	Minimize operation time	Minimize the breakdown of machines	Minimize the utility of the facility	1	Level 1	CO1

Q. No.	Question Statement	Option 1	Option 2	Option 3	Option 4	Marks	BL	CO
MCQ 9	One of the objectives of maintenance is:	to prevent obsolescence	to ensure spare parts management	to satisfy customers	to extend the useful life of Plant & Machinery without sacrificing the level of performance	1	Level 1	CO1
MCQ 10	Which of the following process types is used when a very highly standardized product is desired in high volumes?	Repetitive Process	Batch Process	Project Process	Continuous Process	1	Level 2	CO2
MCQ 11	Enterprise Resource Planning (ERP) has been criticized on several grounds. Which of the following is not a common criticism of ERP?	It doesn't allow decisions and databases from all parts of the organization to be integrated	Implementation is expensive	The effect it has on businesses is disappointing	It can have a disruptive effect on the organization's operations	1	Level 2	CO2
MCQ 12	Demand for a given item is said to be dependent if	the item has several children	there is a deep bill of materials	the finished products are mostly services (rather than goods)	there is an identifiable parent	1	Level 2	CO2
MCQ 13	In MRP (Materials Requirements Planning) the Bill of Materials is:	The required output from a process over time	A list of required safety stock items	The sum of stock-on-hand and work-in-progress	The product structure shows where common parts are used	1	Level 2	CO2
MCQ 14	Three inputs for every MRP system are:	Sales forecast, delivery costs, capacity plan	Average replenishment time, re-order point, economic order quantity	Stock on hand, Master Production Schedule, Bill of Materials	Bill of Materials, sales forecast, sales history	1	Level 2	CO2
MCQ 15	_____ is the scientific technique for planning the ordering and usage of materials at various levels of production and for monitoring the stocks during this transaction.	MPS	MRP	BOM	ERP	1	Level 2	CO2

Q. No.	Question Statement	Option 1	Option 2	Option 3	Option 4	Marks	BL	CO
MCQ 16	The difference between a gross material requirements plan (gross MRP) and a net material requirements plan (net MRP) is	The net MRP includes consideration of the inventory on hand, whereas the gross MRP does not.	The gross MRP doesn't take taxes into account, whereas the net MRP includes the tax considerations.	The gross MRP may not be computerized, but the net MRP must be computerized.	The gross MRP includes consideration of the inventory on hand, whereas the net MRP does not.	1	Level 2	CO2
MCQ 17	_____ determines when specific products will be produced, when specific customer orders will be fulfilled, and what capabilities remain available to satisfy unexpected demand.	Sale and operations planning	Material requirements planning	Distribution requirements planning	Master production schedule	1	Level 2	CO2
MCQ 18	..... is the process of selection of path, which each part of the product will follow	routing	scheduling	follow-up.	dispatching	1	Level 2	CO2
MCQ 19	The major component of solid waste that a retailer generates in the environment	branding	labeling	packaging	naming	1	Level 3	CO3
MCQ 20	. Dependence on an external source of supply is found in which of the following aggregate planning strategies?	varying production rates through overtime or idle time	using part-time workers	Back-ordering during high demand periods	subcontracting	1	Level 3	CO3
MCQ 21	In level scheduling, what is kept uniform from month to month?	product mix	inventory levels	demand levels	production/workforce levels	1	Level 3	CO3
MCQ 22	A machine is said to be a quality machine if it meets the following requirements:	No downtime	No uptime	Working efficiency	Machine working	1	Level 3	CO3
MCQ 23	A tender is advertised in _____	newspapers	business environment	domestic markets	sellers	1	Level 3	CO3
MCQ 24	Which one of the above is not an essential requirement of a contract	Technical matter of nature	Proper and valid consideration	Written and signed	Free consent of parties	1	Level 3	CO3
MCQ 25	Which one is not a benefit of the e-tendering system to the organization	Automated process	Short procurement cycle	Data theft	Minimize human errors	1	Level 3	CO3

Q. No.	Question Statement	Option 1	Option 2	Option 3	Option 4	Marks	BL	CO
MCQ 26	Single Minute Exchange of Dies (SMED) focuses on setup reduction. Which of the following are components of a setup or a changeover?	Startup and fine-tuning of the newly loaded part	Setup of the part on the tool or fixture	Removal and cleanup of the material from the previous setup	Removal of the material from the previous setup	1	Level 3	CO3
MCQ 27	Placing everything in its place is part of _____ in 5S framework	Sort	Straighten	Shine	Sustain	1	Level 3	CO3
MCQ 28	Kaizen as implemented in Lean helps in the following	Ongoing improvement	significant onetime improvement	Ongoing small changes suggested by an external process consultant	One-time significant change suggested by an external process consultant	1	Level 3	CO3
MCQ 29	VSM helps in	Identifying areas where automation can be implemented	Identifying areas for putting the mistake-proofing process	Identifying value-adding and nonvalue adding activity in a process	Identifying areas where Visual control can be implemented	1	Level 3	CO3
MCQ 30	Which of the following are two key pillars of the Toyota Production System?	Just-in-Time and Waste Elimination	Jidoka and Just in Time	Visual Management and Kaizen	Standardization and Levelled Production	1	Level 3	CO3