

VPM's
DR VN BRIMS, Thane
Programme: MMS (2023-25)
Third Semester Regular Examination December 2024

Course Name:	Materials Management	Course Code	O308
Roll No.		Marks	60
Total No. of Questions	6	Duration	3 Hours
Total No. of printed pages	3	Date	09-12-2024

Course Outcome Statements:

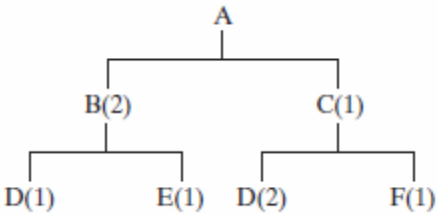
- CO1.** RECALL basic terms and concepts associated with Materials Management.
- CO2.** EXPLAIN the terms and concepts used in all aspects of materials management.
- CO3.** Make Use of principles of materials management to SOLVE materials management problems.
- CO4.** EXAMINE various aspects of materials management and the relevant characteristics of the materials management process from a data-driven decision perspective.
- CO5.** ASSESS various factors of Materials Planning, Purchasing & Stores Accounting for material management decisions.
- CO6.** PROPOSE material management solutions to business scenarios.

Instructions: -

Q. No 1 (All Questions are Compulsory)

Q. No.		Questions	Marks	BL	CO
Q. 1		Case Study			
		<p>As the class president, you find yourself faced with another challenging decision regarding the upcoming class fundraiser. Your class is raising funds for a charity event, and the goal is to organize a successful event that not only raises money but also brings the class together. However, just like before, there's a divide among your classmates on how to proceed.</p> <p>The fundraisers committee consists of a diverse group of individuals, each with their own ideas and preferences. The Art Enthusiasts propose organizing a painting event at a local studio, suggesting it would be a creative and enjoyable way to raise funds. On the other hand, the Sports Fanatics are advocating for a sports tournament, emphasizing the competitive and active nature that could attract a larger crowd.</p> <p>The Environmentalists, meanwhile, are pushing for a green initiative event, highlighting the importance of sustainability and eco-friendly practices. They suggest partnering with local businesses to promote environmental awareness.</p> <p>With the committee unable to reach a consensus, you recall your recent class on decision-making processes, particularly the weighted-point method for supplier selection. It dawns on you that applying a similar approach might help navigate this situation and find a compromise that satisfies the majority.</p> <p>To make an informed decision, you decide to create a weighted-point matrix, assigning scores to different aspects of each proposed fundraiser, such as popularity, potential funds raised, and alignment with class values. You involve the committee members in the process, ensuring that everyone has a say in determining the importance of each criterion.</p> <p>After careful consideration and calculations, the weighted-point method reveals that the painting event scores the highest overall, combining aspects that cater to various interests within the class. You present the findings to the committee, explaining the rationale behind the decision and emphasizing the need for compromise to achieve a successful fundraiser.</p>			

		By utilizing the weighted-point method, you hope to overcome the challenges of reaching a consensus among diverse opinions, ensuring that the chosen fundraiser not only meets the class's goals but also fosters unity and participation from all members.																																																																																																																																																																																																											
	a.	Analyze the potential advantages and disadvantages of each proposed fundraiser using the weighted-point method.	6	Level 4	CO4																																																																																																																																																																																																								
	b.	Evaluate the effectiveness of the weighted-point method in facilitating a decision-making process for the class president.	6	Level 5	CO5																																																																																																																																																																																																								
Q. 2		Answer Any one from the following.																																																																																																																																																																																																											
	a.	<p>A tool manufacturing company buys small engineering items from suppliers. Company is with multiple suppliers and now purchase manager decided to go for vendor evaluation due to revision of policy of single supplier. The different vendors have data as given below for last 30 orders with each of them.</p> <table border="1"> <thead> <tr> <th>Suppliers</th> <th>No. of Delays in order fulfilment</th> <th>No. of rejections</th> <th>Cost offered in Rs.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>3</td> <td>7</td> <td>380</td> </tr> <tr> <td>B</td> <td>5</td> <td>6</td> <td>335</td> </tr> <tr> <td>C</td> <td>8</td> <td>2</td> <td>345</td> </tr> </tbody> </table> <p>The criterion and its Weightage also specified as Quality = 0.45, Cost = 0.30, Delivery 0.25.</p> <p>Determine the best vendor by vendor evaluation.</p>	Suppliers	No. of Delays in order fulfilment	No. of rejections	Cost offered in Rs.	A	3	7	380	B	5	6	335	C	8	2	345	6	Level 5	CO5																																																																																																																																																																																								
Suppliers	No. of Delays in order fulfilment	No. of rejections	Cost offered in Rs.																																																																																																																																																																																																										
A	3	7	380																																																																																																																																																																																																										
B	5	6	335																																																																																																																																																																																																										
C	8	2	345																																																																																																																																																																																																										
	b.	<p>Squizee ltd maintains its stores ledger on FIFO method basis. Following is the summary of the receipts and issues of raw materials during the month of June 2023:</p> <table border="1"> <thead> <tr> <th colspan="10">Stores Ledger Sheet</th> </tr> <tr> <th rowspan="2">2023</th> <th rowspan="2">Date</th> <th rowspan="2">Particulars</th> <th colspan="3">Receipts</th> <th colspan="3">Issues</th> <th colspan="2">Balance</th> </tr> <tr> <th>Quantity</th> <th>Rate Rs.</th> <th>Amount Rs.</th> <th>Quantity</th> <th>Rate Rs.</th> <th>Amount Rs.</th> <th>Quantity</th> <th>Amount Rs.</th> </tr> </thead> <tbody> <tr> <td></td> <td>June 01</td> <td>Balance</td> <td>200</td> <td>18</td> <td>3600</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 03</td> <td>P.O.NO.09</td> <td>300</td> <td>20</td> <td>6000</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 07</td> <td>M.R.NO.14</td> <td></td> <td></td> <td></td> <td>250</td> <td>20</td> <td>5000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 11</td> <td>P.O.NO.09</td> <td>400</td> <td>22</td> <td>8800</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td rowspan="3">June 16</td> <td rowspan="3">M.R.NO.16</td> <td></td> <td></td> <td></td> <td>400</td> <td>22</td> <td>8800</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>50</td> <td>20</td> <td>1000</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>100</td> <td>18</td> <td>1800</td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 19</td> <td>P.O.NO.21</td> <td>600</td> <td>20</td> <td>12000</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 22</td> <td>M.R.NO.18</td> <td></td> <td></td> <td></td> <td>300</td> <td>20</td> <td>6000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 24</td> <td>P.O.NO.24</td> <td>300</td> <td>25</td> <td>7500</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td rowspan="2">June 26</td> <td rowspan="2">M.R.NO.26</td> <td></td> <td></td> <td></td> <td>300</td> <td>25</td> <td>7500</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>200</td> <td>20</td> <td>4000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 28</td> <td>P.O.NO.27</td> <td>200</td> <td>27</td> <td>5400</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td rowspan="2">June 29</td> <td rowspan="2">M.R.NO.32</td> <td></td> <td></td> <td></td> <td>200</td> <td>27</td> <td>5400</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>100</td> <td>20</td> <td>2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>June 30</td> <td>P.O.NO.30</td> <td>150</td> <td>30</td> <td>4500</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Determine closing stock value for FIFO method</p>	Stores Ledger Sheet										2023	Date	Particulars	Receipts			Issues			Balance		Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Amount Rs.		June 01	Balance	200	18	3600							June 03	P.O.NO.09	300	20	6000							June 07	M.R.NO.14				250	20	5000				June 11	P.O.NO.09	400	22	8800							June 16	M.R.NO.16				400	22	8800						50	20	1000									100	18	1800				June 19	P.O.NO.21	600	20	12000							June 22	M.R.NO.18				300	20	6000				June 24	P.O.NO.24	300	25	7500							June 26	M.R.NO.26				300	25	7500								200	20	4000				June 28	P.O.NO.27	200	27	5400							June 29	M.R.NO.32				200	27	5400								100	20	2000				June 30	P.O.NO.30	150	30	4500						6	Level 5	CO5
Stores Ledger Sheet																																																																																																																																																																																																													
2023	Date	Particulars	Receipts			Issues			Balance																																																																																																																																																																																																				
			Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Amount Rs.																																																																																																																																																																																																			
	June 01	Balance	200	18	3600																																																																																																																																																																																																								
	June 03	P.O.NO.09	300	20	6000																																																																																																																																																																																																								
	June 07	M.R.NO.14				250	20	5000																																																																																																																																																																																																					
	June 11	P.O.NO.09	400	22	8800																																																																																																																																																																																																								
	June 16	M.R.NO.16				400	22	8800																																																																																																																																																																																																					
					50	20	1000																																																																																																																																																																																																						
							100	18	1800																																																																																																																																																																																																				
	June 19	P.O.NO.21	600	20	12000																																																																																																																																																																																																								
	June 22	M.R.NO.18				300	20	6000																																																																																																																																																																																																					
	June 24	P.O.NO.24	300	25	7500																																																																																																																																																																																																								
	June 26	M.R.NO.26				300	25	7500																																																																																																																																																																																																					
							200	20	4000																																																																																																																																																																																																				
	June 28	P.O.NO.27	200	27	5400																																																																																																																																																																																																								
	June 29	M.R.NO.32				200	27	5400																																																																																																																																																																																																					
							100	20	2000																																																																																																																																																																																																				
	June 30	P.O.NO.30	150	30	4500																																																																																																																																																																																																								
Q. 3		Answer Any one from the following.																																																																																																																																																																																																											
	a.	Examine the potential impact of technological advancements on the rolling machine. How does the decision to purchase or lease align with the company's strategy for staying technologically competitive and adaptable to future changes in the steel manufacturing industry?	6	Level 4	CO4																																																																																																																																																																																																								
	b.	A manufacturing company is considering the acquisition of a new automated production line to improve efficiency. Break down the financial implications of the automated production line purchase.	6	Level 4	CO4																																																																																																																																																																																																								

		Analyze the projected returns on investment, and the impact on overall budget, taking into account factors such as maintenance costs and potential downtime?																																																																								
Q. 4		Answer Any two from the following.																																																																								
	a.	Apply the principles of store preservation in a materials management context by proposing specific strategies and methods that could be implemented to safeguard various types of raw material within a storage facility of food products.	6	Level 3	CO3																																																																					
	b.	Apply the stages of disposal in a materials management context by outlining a comprehensive plan for the efficient and environmentally responsible disposal of obsolete inventory items of paper industry.	6	Level 3	CO3																																																																					
	c.	Given the following product tree, Apply MRP principles and determine the gross and net requirements of B, C, D, E & F. All lead times are one week, and the quantities required are shown in parentheses. The master production schedule calls for 100 As' to be available in week 5. There are 20 Bs' available. All other on-hand balances = 0. The order Quantity is: B: 60 C: Lot for Lot D: 60 F: 30 E: Lot for Lot  <pre> graph TD A --> B["B(2)"] A --> C["C(1)"] B --> D1["D(1)"] B --> E["E(1)"] C --> D2["D(2)"] C --> F["F(1)"] </pre>	6	Level 3	CO3																																																																					
Q. 5		Answer Any two from the following.																																																																								
	a.	Illustrate how advantages and disadvantages of standardisation impacts efficiency, cost-effectiveness, and adaptability within the context of a supply chain.	6	Level 2	CO2																																																																					
	b.	Demonstrate LIFO Rule on following data and update the stock on hand with respective material valuation: <table border="1" data-bbox="316 1332 1109 1612"> <thead> <tr> <th rowspan="2">Date</th> <th colspan="3">Receipts</th> <th colspan="3">Issues</th> <th colspan="3">Stock on hand</th> </tr> <tr> <th>Qty.</th> <th>Rate</th> <th>Value</th> <th>Qty.</th> <th>Rate</th> <th>Value</th> <th>Qty.</th> <th>Rate</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>1/1/15</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>1/2/15</td> <td>1000</td> <td>1.00</td> <td>1000</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> </tr> <tr> <td>14/2/15</td> <td>2000</td> <td>1.10</td> <td>2200</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> </tr> <tr> <td>20/2/15</td> <td>-</td> <td>-</td> <td>-</td> <td>500</td> <td>1.10</td> <td>550</td> <td></td> <td></td> <td></td> </tr> <tr> <td>28/2/15</td> <td>-</td> <td>-</td> <td>-</td> <td>1500</td> <td>1.10</td> <td>1650</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Date	Receipts			Issues			Stock on hand			Qty.	Rate	Value	Qty.	Rate	Value	Qty.	Rate	Value	1/1/15	-	-	-	-	-	-	-	-	-	1/2/15	1000	1.00	1000	-	-	-				14/2/15	2000	1.10	2200	-	-	-				20/2/15	-	-	-	500	1.10	550				28/2/15	-	-	-	1500	1.10	1650				6	Level 2	CO2
Date	Receipts			Issues			Stock on hand																																																																			
	Qty.	Rate	Value	Qty.	Rate	Value	Qty.	Rate	Value																																																																	
1/1/15	-	-	-	-	-	-	-	-	-																																																																	
1/2/15	1000	1.00	1000	-	-	-																																																																				
14/2/15	2000	1.10	2200	-	-	-																																																																				
20/2/15	-	-	-	500	1.10	550																																																																				
28/2/15	-	-	-	1500	1.10	1650																																																																				
	c.	Explain importance of ethics in Materials Management.	6	Level 2	CO2																																																																					
Q. 6		Answer Any two from the following.																																																																								
	a.	List the primary functions of materials management in a supply chain.	6	Level 1	CO1																																																																					
	b.	Define the inventory classifications VED, FSN, and SDE. outlining the specific criteria associated with each category within the context of supply chain management.	6	Level 1	CO1																																																																					
	c.	List the fundamental principles and criteria involved in KODAK codification	6	Level 1	CO1																																																																					