

INTERMEDIATE EXAMINATION
Syllabus 2016

Paper 9: OPERATIONS MANAGEMENT & STRATEGIC MANAGEMENT (OMSM)

Time Allowed: 3 Hours

Full Marks: 100

There are Sections A, B, C and D to be answered subject to instructions given against each.

Section A				20 × 1 = 20 Marks	
You are required to answer all the questions. Each question carries 1 mark. Instructions: Each question is followed by 4 Answer choices and only one is correct. You are required to select the choice which according to you represents the correct answer.					
1.	a.	Which of the following is not the technique of sales forecasting?			
		(i)	Survey of buyer's intentions or the user's expectation method		
		(ii)	Collective opinion or sales force composite method		
		(iii)	Server idle time	A	
		(iv)	Experts' opinions		
	b.	Which of the following is not the scope of operation management?			
		(i)	Production Planning and Control		
		(ii)	Plant layouts and Material Handling		
		(iii)	Customer service	A	
		(iv)	Materials Management		
	c.	The fundamental criteria in valuation of a job into account are to make a specific list of factors which affect job values. The many factors are:			
		(i)	Working conditions.		
		(ii)	Qualifications required of the worker,		
		(iii)	Job responsibilities,		
		(iv)	All of the above	A	
	d.	Which of the following is not the operating characteristic of the queuing system?			
		(i)	System length		
		(ii)	Waiting time in the queue		
		(iii)	Service-in-random-order (SIRO)	A	
		(iv)	Total time in the system		
	e.	Production or operations strategy is directly influenced by product design because each product characteristic directly affects how the product can be made or produced (i.e., process technology and process design). State your opinion for this statement.			
		(i)	Strongly Agree	A	
		(ii)	Strongly Disagree		
		(iii)	Neutral		
		(iv)	None		
	f.	Process Design is concerned with:-			
		(i)	Expected volume of output.		
		(ii)	Kind of labour skills available, amount of labour available and their wage rates.		

	(iii)	Whether the process should be capital-intensive or labour- intensive.		
	(iv)	All of the above	A	
g.	Long range forecasting is useful in:			
	(i)	Plan for Research and Development		
	(ii)	To Schedule jobs in production		
	(iii)	In purchasing the material to meet the present production demand	A	
	(iv)	To assess manpower required in the coming month.		
h.	Most suitable layout for job Production is			
	(i)	Line layout		
	(ii)	Matrix layout		
	(iii)	Process layout	A	
	(iv)	Product layout		
i.	The starting point of Production cycle is:			
	(i)	Product design		
	(ii)	Production planning		
	(iii)	Routing		
	(iv)	Market research	A	
j.	Preventive maintenance is useful in reducing_____.			
	(i)	Inspection Cost,		
	(ii)	Shutdown Cost,	A	
	(iii)	Cost of premature replacement,		
	(iv)	Set-up cost of machine		
k.	Identify which one of the following statements is TRUE?			
	(i)	Merit Rating is used to determine the cost of a product		
	(ii)	Breakdown maintenance doesn't require use of standby machines.		
	(iii)	Project costs increase as the duration of the project increases.	A	
	(iv)	Production planning and control is essentially concerned with the control of Finished goods		
l.	The effective management of capacity is the most important responsibility of production and operations management. Thus, Capacity planning is concerned with finding answers to the basic questions regarding capacity such as:			
	(i)	What kind of capacity is needed?		
	(ii)	How much capacity is needed?		
	(iii)	When this capacity is needed?		
	(iv)	All of the above	A	
m.	Which of the following is not the basic type of production control?			
	(i)	Load control		
	(ii)	Block control		
	(iii)	Budget control	A	
	(iv)	Special project control		
n.	There are two aspects of a service system namely; structure of the service system, and the speed of service. State your opinion for this statement.			
	(i)	Strongly Agree	A	

	(ii)	Strongly Disagree		
	(iii)	Neutral		
	(iv)	None		
o.	For an entrepreneur:			
	(i)	Mission is before the vision		
	(ii)	Vision or mission are un-important issues		
	(iii)	Vision is before the mission.	A	
	(iv)	Both are developed simultaneously.		
p.	Board of directors has certain basic task as follows:			
	(i)	To define the corporate mission and stop irregular practice		
	(ii)	To design the course of strategic options and appointment of top management		
	(iii)	To set the ROI and other business performance targets		
	(iv)	Both (i) and (ii)	A	
q.	A strategy is usually successful when the other S's in the 7-S framework fit into or support the strategy. Which of the following is not an element of the framework?			
	(i)	Shared Vision	A	
	(ii)	Style		
	(iii)	Structure		
	(iv)	Systems		
r.	A Question Mark in BCG Matrix is an investment, which			
	(i)	Yields low current income but has bright growth prospects.	A	
	(ii)	Yields high current income and has bright growth prospects.		
	(iii)	Yields high current income and has bleak growth prospects.		
	(iv)	Yields low current income and has bleak growth prospects.		
s.	The strategy of the TATA group in India could be viewed as a good example of			
	(i)	Conglomerate diversification	A	
	(ii)	Market development		
	(iii)	Cost Leadership		
	(iv)	Concentric diversification		
t.	Benchmarking is:			
	(i)	The analytical tool to identify high cost activities based on the 'Pareto Analysis'		
	(ii)	The search for industries best practices that lead to superior performance	A	
	(iii)	The simulation of cost reduction schemes that help to build commitment and improvement of actions		
	(iv)	The process of marketing and redesigning the way a typical company works		
Section B				10 × 2
You are required to answer all the questions. Each question carries 2 marks.				= 20
Instructions: Each question is followed by a space where you are required to type your answer.				Marks
2.	a.	A Linear Programming problem has how many basic parts? What are the parts?		
		Type your answer here		
		Two, the objective function and the constraint set.		
	b.	How do we know the arrangement of a production line so that there is an even flow of production		

		from one workstation to the next, i.e. so that there are no delays at any work station that will leave the next workstation with idle time?	
		Type your answer here Line balancing	
	c.	This is a written document that specifies in detail the firm's marketing objectives and how marketing management will use the controllable marketing tools such as product design, channels, promotion and pricing to achieve these objectives. Name the document.	
		Type your answer here Marketing Plan	
	d.	Name the act of releasing the production documents to production department is known	
		Type your answer here Dispatching	
	e.	Name the device of expressing the ratio between outputs and the inputs of the resources numerically.	
		Type your answer here Productivity Index	
	f.	Which method is used in scheduling a project?	
		Type your answer here PERT & CPM	
	g.	Name the method where the planner plans each operation to be done at work centers and the sequences of operations.	
		Type your answer here Operational Planning	
	h.	Name the process that involves drastic measures or break-through improvements to improve the performance of a firm. It involves the concept of clean-slate approach or starting from scratch in redesigning the business processes.	
		Type your answer here Re-engineering	
	i.	What relates to achieving corporate objectives for short-run and/or long-run?	
		Type your answer here Corporate Plans	
	j.	This strategy is a process of entering new industries distinct from a company's core or original industry, to make new kinds of products that can be sold profitably to customers in these new industries. Name the strategy.	
		Type your answer here Diversification strategy	
Section C			12 × 4
You are required to answer any 4 out of 6 questions in this section			= 48
Instructions: Each question is followed by a space where you are required to type your answer.			Marks
3.	a.	Discuss the term 'Enterprise Resources Planning'. What does it involve?	8
		Type of answer here Enterprise resource planning, popularly known as ERP, is today's buzz-word in the corporate world. Companies' world-wide use ERP to integrate business processes and thereby reduce costs and increase productivity. It has established its base as a global phenomenon. Traditionally, companies developed isolated computer applications to suit and satisfy each of their functional segments such as sales, purchase, production, inventory, personnel and accounts. Materials Requirement Planning (MRP I) and Manufacturing Resource Planning re (MRP II) were developed basically to address the requirements of the manufacturing set-up. But the information available in various functional segments was so scattered that it was almost impossible to consolidate the information and provide the same to the people in the top management to enable them to take vital business decisions. Hence, the companies, whether in the manufacturing or the	

		<p>service sector have been searching for the 'total solution' on an integrated system which could provide for the information needs of the entire enterprise. ERP software was developed to provide such a 'total solution' to the business enterprise. To be highly successful in today's global competitive market, it is necessary that business enterprises continuously strive for developing a high level of interaction and coordination along the supply chain and improve in the area of quality, time to reach the market, customer satisfaction, performance and profitability. The ERP software fulfills this need.</p> <p>Thus, to conclude ERP serves the following purposes:</p> <ul style="list-style-type: none"> • This, business process management software package developed for optimum use of resources of an enterprise in a planned manner. • ERP integrates the entire enterprise starting from the supplier to the customer, covering logistics, financial and human resources. This enables the enterprise to increase productivity by reducing costs. <p>ERP is a package for cost saving. Once the ERP is implemented, a single solution addresses the information needs of the whole organisation.</p>	
	b.	What are the factors affecting determination of plant capacity?	4
		<p>Type of answer here</p> <p>The factors affecting determination of plant capacity are as follows:</p> <ol style="list-style-type: none"> 1.Capital investment required, 2.Changes in product design, process design, market conditions and product life cycles, 3.Flexibility for capacity additions, 4.Level of automation desired, 5.Market demand for the product 6.Product obsolescence and technology obsolescence and 7. Type of technology selected 	
4.	a.	State the importance of the concept of productivity.	8
		<p>Type your answer here</p> <p>The importance of the concept of productivity can be viewed from the following points:</p> <ol style="list-style-type: none"> 1. To beat the competition: It is an age of cut-throat competition. There may be other commodities which can serve as the substitutes of the terms 'product' and can attract the consumers' purchasing power. The firm whose productivity is higher can only beat the competition and can exist in the market for long. 2. Guide to Management: The productivity indices are very useful for the management and can be used for different purposes. These indices can serve as a valuable guide to the management for improving the performance of its enterprise. The productivity measures can be used for the following purposes: (a) Strategic: With the help of productivity indices, the efficiency of different firms can be measured, analysed and compared. The necessary steps can be taken to improve the productiveness of the firm taking in view the productiveness of the other competitive firms. (b) Tactical: Different units or the sectors of the firm can also be compared as regards to their productivity and the productivity of the less productive units or sectors can be improved. (c) Planning: A firm uses different inputs in producing the goods. A comparison of relative benefits accruing from the use of different inputs can be had and the most beneficial input can be used in production. It helps the management to plan for the future. (d) Administration: Productivity indices indicate the progress of the firm over a period of years. The productivity of different inputs, including labour, can be measured individually. The individual productivity indices help the management in bargaining with the labour leaders, trade unions and the Government in case of labour disputes regarding welfare activities. Thus administration can be improved with the help of productivity indices. 3. An Indicator of Progress: In economically backward countries, productivity movement is basic 	

		<p>aspect of progress. It implies the development of an attitude of mind and a constant urge to better, cheaper, quicker and safer ways of doing a job which could be either manufacturing a product or providing a service. In an urge to improve the productivity, new inventions take place. Thus productivity is an aspect of basic progress.</p> <p>4. Maximum utilisation of Scarce Resources: In order to provide the articles or commodities to the consumers at the lowest possible cost, the productivity urges to utilise the available resources to the maximum possible extent to provide full satisfaction of customers. The productivity processes and techniques are designed to facilitate more efficient work involving less fatigue to workers by improvements in the layout of the plant and work, better working environment and simplification of works.</p> <p>5. Key to National Prosperity: The productivity, in fact, has become the synonymous to progress. Higher productivity is an index of more production with the same inputs at lower cost. It enables industry to offer goods to the general public at cheaper rates and results in expansion of markets. The working conditions and wages of workers will improve and industrialists too will get larger profits. Thus higher productivity is the key to national prosperity. The secrets of Japan and Western countries’ prosperity lie in increased productivity.</p> <p>6. Prosperity to Labour: The higher productivity is a boon to labour also. It brings improved working conditions, better wages and salaries to workers, better labour welfare activities to labourers. Thus their standard of living is improved.</p> <p>7. Other Uses: (i) Higher productivity increases the profits and reserve funds of the industry that can be used for expansion and modernisation. (ii) It increases the goodwill of the firm due to cheaper goods to the public, well-off staff and more profits and better financial position.(iii) It improves the competitive strength of the company in export markets through reduction in cost of production and quality products.</p>																																									
	b.	State the Objectives of Product Design. ?	4																																								
		<p>Type your answer here</p> <p>(i) The overall objective is profit generation in the long run.</p> <p>(ii) To achieve the desired product quality.</p> <p>(iii) To reduce the development time and cost to the minimum.</p> <p>(iv) To reduce the cost of the product.</p> <p>(v) To ensure reducibility or manufacturability (design for manufacturing and assembly).</p>																																									
5.	a.	<p>A patient is suggested by the dietician to fulfill the deficiencies of some essential nutrients namely; Vitamins, Minerals, Proteins and Fats in his body by including them in his regular diet. The patient is interested in estimating the minimum cost at which he can include these aforementioned nutrients from amongst these four kinds of foods options available. Formulate an LP Model.</p> <table border="1"><thead><tr><th rowspan="2">Food Option</th><th colspan="4">Nutritional Content Per Unit of Consumption</th><th rowspan="2">Rate per unit</th></tr><tr><th>Vitamins</th><th>Minerals</th><th>Proteins</th><th>Fats</th></tr></thead><tbody><tr><td>1</td><td>2</td><td>1</td><td>7</td><td>3</td><td>40</td></tr><tr><td>2</td><td>5</td><td>3</td><td>4</td><td>6</td><td>45</td></tr><tr><td>3</td><td>7</td><td>7</td><td>6</td><td>7</td><td>65</td></tr><tr><td>4</td><td>5</td><td>4</td><td>3</td><td>4</td><td>50</td></tr><tr><td>Threshold Need</td><td>750</td><td>200</td><td>265</td><td>600</td><td></td></tr></tbody></table>	Food Option	Nutritional Content Per Unit of Consumption				Rate per unit	Vitamins	Minerals	Proteins	Fats	1	2	1	7	3	40	2	5	3	4	6	45	3	7	7	6	7	65	4	5	4	3	4	50	Threshold Need	750	200	265	600		5
Food Option	Nutritional Content Per Unit of Consumption				Rate per unit																																						
	Vitamins	Minerals	Proteins	Fats																																							
1	2	1	7	3	40																																						
2	5	3	4	6	45																																						
3	7	7	6	7	65																																						
4	5	4	3	4	50																																						
Threshold Need	750	200	265	600																																							
		<p>Type your answer here</p> <p>To Minimize $Z = \text{Rs. } (40 \times 1 + 45 \times 2 + 65 \times 3 + 50 \times 4)$</p> <p>$2 \times 1 + 5 \times 2 + 7 \times 3 + 5 \times 4 \geq 750$ (Vitamins)</p> <p>$1 \times 1 + 3 \times 2 + 7 \times 3 + 4 \times 4 \geq 200$ (Minerals)</p>																																									

		$7 X 1 + 4 X 2 + 6 X 3 + 3 X 4 \geq 265$ (Proteins) $3 X 1 + 6 X 2 + 7 X 3 + 4 X 4 \geq 600$ (Fats) $X 1 , X 2 , X 3 + X 4 \text{ each} \geq 0$									
	b.	Provide an overview of JIT manufacturing.	7								
		Type your answer here Overview of JIT manufacturing JIT manufacturing includes many activities : (i) Inventory reduction: JIT is a system for reducing inventory levels at all stages of production viz. raw materials, work-in-progress and finished goods. (ii) Quality improvement: JIT provides a procedure for improving quality both within the firm and outside the firm. (iii) Lead time reduction: With JIT, lead time components such as set-up and move times are significantly reduced. (iv) Vendor control/Performance improvement: JIT gives the buying organisation greater power in buyer-supplier relationship. The firm moves from a situation where multiple suppliers are used to a situation where only one or two suppliers are used for supplying most of the parts. With fewer suppliers, the buying organisation has more power because it is making larger purchases from each vendor. Also, the buying organisation can now impose higher requirements on each supplier in terms of delivery and quality. (v) Continuous Improvement: In the JIT system, existing problems are corrected and new problems identified in a never-ending approach to operations management. (vi) Total Preventive Maintenance: JIT emphasises preventive maintenance to reduce the risk of equipment break-downs which may cause production hold ups and increase in manufacturing cycle time due to delays. (vii) Strategic Gain: JIT provides the firm’s management with a means of developing, implementing and maintaining a sustainable competitive advantage in the market place .									
6.	a.	What are the objectives of maintenance?	6								
		Type your answer here The objectives of maintenance are: (i) To keep all the production facilities and other allied facilities such as building and premises, power supply system, etc. in an optimum working condition, (ii) To ensure specified accuracy to products and time schedule of delivery to customers, (iii) To keep the down time of the machine at minimum, so that the production program is not disturbed, (iv) To keep the production cycle with in the stipulated range, (v) To modify the machine tools to meet the augmented need for production, (vi) To improve productivity of existing machine tools and to avoid sinking of additional capital, (vii) To keep the maintenance cost at a minimum as far as possible, there by keeping the factory Overheads at minimum, (viii) To extend the useful life of plant and machinery, without sacrificing the level of performance.									
	b.	List the characteristic of modern operations function.	6								
		Type your answer here <table><tr><th>Strategic Management</th><th>Strategic Planning</th></tr><tr><td>It is focused on producing strategic results; new markets; new products; new technologies etc.</td><td>It is focused on making optimal strategic decisions.</td></tr><tr><td>It broadens focus to include psychological, sociological and political variables.</td><td>It is focused on business, economic and technological variables</td></tr><tr><td>It is an organizational action process.</td><td>It is an analytical process</td></tr></table>	Strategic Management	Strategic Planning	It is focused on producing strategic results; new markets; new products; new technologies etc.	It is focused on making optimal strategic decisions.	It broadens focus to include psychological, sociological and political variables.	It is focused on business, economic and technological variables	It is an organizational action process.	It is an analytical process	
Strategic Management	Strategic Planning										
It is focused on producing strategic results; new markets; new products; new technologies etc.	It is focused on making optimal strategic decisions.										
It broadens focus to include psychological, sociological and political variables.	It is focused on business, economic and technological variables										
It is an organizational action process.	It is an analytical process										

		It is about choosing things to do and also about the people who will do them.	It is about choosing things to do.	
7.	a.	Describe the types of strategic control systems.		7
		<p>Type your answer here</p> <p>Types of Strategic Control Systems:</p> <ul style="list-style-type: none"> • Personal Control - It is the desire to shape and influence the behavior of a person in a face to face interaction in order to achieve the organisation's goals. Direct supervision is the most common form of personal control as it helps in identifying the problems faced by subordinates and better man management. Personal control may also come from group of peers when people work in teams. Here personal control is all about possibility of learning to occur and competencies to develop. • Output control - This system involves the estimation and forecasting of appropriate performance goals for each unit/division, department and employees and then measure the actual performance relative to these goals. It is often observed that the organisation's reward system is linked to performance on these goals. It can therefore be concluded that the output control system also provides an incentive structure for motivating employees at all levels of the organisation. • Behaviour control - The establishment of a comprehensive system of rules and procedures to direct the actions or behaviour of divisions, functions and individuals is called behaviour control. The main purpose of having behavior control is not to specify goals but to standardise the way of reaching them. It is felt that if rules are standardised then outcomes are predictable. It is of utmost importance that the management reviews behaviour controls over time. The rules that have been established tend to increase over time leading to inflexibility to react to the changing environment thereby adversely affecting the organisation's competitive advantage. 		
	b.	Describe core competence.		5
		<p>Type your answer here</p> <p>Core competences are activities or processes that critically underpin an organisation's competitive advantage. The core competences have the following characteristics (i) Provide distinctive advantage for the firm (ii) Difficult for the competitors to imitate - Competence is rare - Competence is concerned with managing complex activities or processes - Competitors are not clear which resource or competences have caused the success of the firm. This is known as causal ambiguity - The competence is embedded in the culture (iii) They make a significant contribution to customer value and the end products offered by the firm (iv) They provide access to a wide variety of markets In order to understand this let us take the case of Honda. Honda's core competence lies in design and manufacture of engine and its end products includes motorcycles, cars, generators, lawn-mowers, etc. Similarly the core competences of Canon are optics, imagery and microprocessors and its end products includes cameras, fax machine, image-scanners, etc. Core skills are fundamental resources of an organisation. It is very important that organisation's should understand the process of developing core competence. Building core competence is a time consuming and challenging exercise. The core competency building process has three stages –</p> <ul style="list-style-type: none"> • Developing the ability to do something by upgrading or expanding the skills. • Learning to perform the activity consistently well, so that it transforms in to a competence or capability. Sharpening performance such that it becomes better than rivals at performing the activity, thus raising the competence to the rank of a distinctive competence (or competitively superior capability). This opens an avenue to competitive advantage. 		
8.		You are required to write any Short Note on any 4 out of 5.		4 × 3 = 12 Marks

a.	Manufacturing as competitive advantage.	
	<p>Type your answer here</p> <p>In the past production was considered to be like any other function in the organisation. When demand was high and production capacities were inadequate, the concern was to somehow muster all inputs and use them to produce goods which would be grabbed by market. But today's scenario is contrasting. Plants have excess capacities, competition is mounting and firms look and gain competitive advantage to survive and succeed. Interestingly, production system offers vast scope to gain competitive edge and firms intend to exploit the potential. Total Quality Management (TQM), Time-Based Competition, Business Process Re-engineering (BPRE), Just-in-Time (JIT), Focused Factory, Flexible Manufacturing Systems (FMS), Computer Integrated Manufacturing (CIM), and The Virtual Corporation are but only some techniques which the companies are employing to gain competitive advantage.</p>	
b.	Material Requirements Planning.	
	<p>Type your answer here</p> <p>Material requirement planning (MRP) refers to the basic calculations used to determine component requirements from end item requirements. It also refers to a broader information system that uses the dependence relationship to plan and control manufacturing operations. MRP is a technique of working backward from the scheduled quantities and needs dates for end items specified in a master production schedule to determine the requirements for components needed to meet the master production schedule. The technique determines what components are needed, how many are needed, when they are needed and when they should be ordered so that they are likely to be available as needed. The MRP logic serves as the key component in an information system for planning and controlling production operations and purchasing. The information provided by MRP is highly useful in scheduling because it indicates the relative priorities of shop orders and purchase orders. "Materials Requirement Planning (MRP) is a technique for determining the quantity and timing for the acquisition of dependent demand items needed to satisfy master production schedule requirements." MRP is one of the powerful tools that, when applied properly, helps the managers in achieving effective manufacturing control.</p>	
c.	Properties of Aggregate Planning .	
	<p>Type your answer here</p> <p>To facilitate the production manager, the aggregate planning must have the following characteristics:</p> <ul style="list-style-type: none"> (i) Both out put and sales should be expressed in a logical overall unit of measuring. For example, an automobile manufacturing company can say 1000 vehicles per year, without giving the number of each variety of vehicle. Similarly, a paint industry can say 10,000 litres of paint and does not mention the quantities of each variety of colour. (ii) Acceptable forecast for some reasonable planning period, say one year. (iii) A method of identification and fixing the relevant costs associated with the plant. Availability of alternatives for meeting the objective of the organization. Ability to construct a model that will permit to take optimal or near optimal decisions for the sequence of planning periods in the planning horizon. (iv) Facilities that are considered fixed to carry out the objective. 	
d.	Advantages of Strategic Business Units .	
	<p>Type your answer here</p> <p>Advantages:</p> <ul style="list-style-type: none"> (i) Promotes accountability since units' heads are responsible for individual SBU profitability (ii) Career development opportunities are further higher in this structure (iii) Allow better control of categories of products manufacturing, marketing and distributions (iv) Helps to expand in different related and unrelated businesses 	

	e.	Limitations of the BCG Model .																																				
		<p>Type your answer here</p> <p>The BCG Matrix produces a framework for allocating resources among different business units and makes it possible to compare many business units at a glance. But BCG Matrix is not free from limitations, such as-</p> <ol style="list-style-type: none">1. BCG matrix classifies businesses as low and high, but generally businesses can be medium also. Thus, the true nature of business may not be reflected.2. Market is not clearly defined in this model.3. High market share does not always leads to high profits. There are high costs also involved with high market share.4. Growth rate and relative market share are not the only indicators of profitability. This model ignores and overlooks other indicators of profitability.5. At times, dogs may help other businesses in gaining competitive advantage. They can earn even more than cash cows sometimes.6. This four-celled approach is considered as to be too simplistic.																																				
<p align="center">Section D</p> <p align="center">You are required to answer all the questions in this section.</p> <p align="center">Instructions: Each question is followed by a space where you are required to type your answer.</p>			<p align="center">12 Marks</p>																																			
9.		<p>Sky Ltd. is a thriving company which produces table fans. During summer season the business booms every year. The company is based out of Kolkata and has 3 plants in the outskirts of the city. In order to meet the regular demand of the retailers, they keep some products in their local warehouses in and around Kolkata. They currently have 4 such warehouses. During the pandemic period the business suffered quite some loss. So, the company decided to reduce costs wherever possible and do their activities efficiently. They are now willing to find the best solution for reducing its cost of transportation from the plants to the warehouses, such that the demand is also met.</p> <p>Luckily, the company keeps a record of the supply and demand of the plants and the warehouses very diligently. It is quite obvious that the company wants the fulfilment of the demand of the warehouses at the lowest possible cost. So after a period of detailed study, it has collected and tabulated the data of the demand and supply of the products in units and the respective cost of transporting them from the individual plants to the warehouses.</p> <table border="1"><tr><th rowspan="2">PLANTS</th><th colspan="5">WAREHOUSES</th></tr><tr><th>I</th><th>II</th><th>III</th><th>IV</th><th>SUPPLY</th></tr><tr><td>A</td><td>5</td><td>10</td><td>4</td><td>5</td><td>10</td></tr><tr><td>B</td><td>6</td><td>8</td><td>7</td><td>2</td><td>25</td></tr><tr><td>C</td><td>4</td><td>2</td><td>5</td><td>7</td><td>20</td></tr><tr><td>DEMAND</td><td>25</td><td>10</td><td>15</td><td>5</td><td></td></tr></table> <p>Answer the following questions giving brief answers.</p>	PLANTS	WAREHOUSES					I	II	III	IV	SUPPLY	A	5	10	4	5	10	B	6	8	7	2	25	C	4	2	5	7	20	DEMAND	25	10	15	5		
PLANTS	WAREHOUSES																																					
	I	II	III	IV	SUPPLY																																	
A	5	10	4	5	10																																	
B	6	8	7	2	25																																	
C	4	2	5	7	20																																	
DEMAND	25	10	15	5																																		
	a.	Determine the total transportation cost using the least cost method.	2																																			
		<p>Type your answer here</p> <p>Total Transportation Cost= (4 × 10) + (6 × 15) + (7 × 5) + (2 × 5) + (4 × 10) + (2 × 10)</p>																																				

		<div>= Rs. 235</div> <div>ROUGH WORK</div> <div>PLANTS WAREHOUSES</div> <table><thead><tr><th></th><th>I [vi= 3]</th><th>II [vi=1]</th><th>III [vi=4]</th><th>IV [vi= -1]</th><th colspan="4">SUPPLY</th></tr></thead><tbody><tr><td>A</td><td>5 []</td><td>10 []</td><td>4 [10]</td><td>5 []</td><td>10</td><td>0</td><td>-</td><td>-</td></tr><tr><td>B</td><td>6 [15]</td><td>8 []</td><td>7 [5]</td><td>2 [5]</td><td>25</td><td>20</td><td>5</td><td>0</td></tr><tr><td>C</td><td>4 [10]</td><td>2 [10]</td><td>5 []</td><td>7[]</td><td>20</td><td>10</td><td>0</td><td>-</td></tr><tr><td>DEMAND</td><td>25</td><td>10</td><td>15</td><td>5</td><td colspan="4">55</td></tr><tr><td></td><td>15</td><td>0</td><td>5</td><td>0</td><td colspan="4"></td></tr><tr><td></td><td>0</td><td>-</td><td>0</td><td>-</td><td colspan="4"></td></tr><tr><td></td><td>-</td><td>-</td><td>-</td><td>-</td><td colspan="4"></td></tr></tbody></table>		I [vi= 3]	II [vi=1]	III [vi=4]	IV [vi= -1]	SUPPLY				A	5 []	10 []	4 [10]	5 []	10	0	-	-	B	6 [15]	8 []	7 [5]	2 [5]	25	20	5	0	C	4 [10]	2 [10]	5 []	7[]	20	10	0	-	DEMAND	25	10	15	5	55					15	0	5	0						0	-	0	-						-	-	-	-					
	I [vi= 3]	II [vi=1]	III [vi=4]	IV [vi= -1]	SUPPLY																																																																						
A	5 []	10 []	4 [10]	5 []	10	0	-	-																																																																			
B	6 [15]	8 []	7 [5]	2 [5]	25	20	5	0																																																																			
C	4 [10]	2 [10]	5 []	7[]	20	10	0	-																																																																			
DEMAND	25	10	15	5	55																																																																						
	15	0	5	0																																																																							
	0	-	0	-																																																																							
	-	-	-	-																																																																							
	b.	Is the solution degenerate?							4																																																																		
		<div>Type your answer here</div> <div>No, the solution is not degenerate because the number of occupied cells is not less than the required number of $m + n - 1$.</div> <div>No of allocated cells = 6</div> <div>No. of rows = 3</div> <div>No. of Column = 4</div> <div>$M + n - 1 = 6$</div> <div>$3 + 4 - 1=6$</div> <div>$6 = 6$</div>																																																																									
10.		<div>Delight Ltd. have many different products in the FMCG industry. One of their most sought-after product is their butter. It has been almost 50 years that they are holding the maximum amount of market share in the industry. Many new entrants enter the market however nobody has been able to eat away the market share of Delight Ltd.'s butter. Inspite of a stagnant growth in the market the market share remains strong as ever. However, the company has also analysed that their packaged fruit juice does not do well in the market. Neither the product has a good market share nor the market for the product is growing.</div> <div>Owing to this stark difference among their own products the company has listed all its products or rather strategic business units (SBUs) according to their market share and growth prospects. The marketing team has informed the company regarding a strategic management tool call the BCG Matrix to help understand the current positioning and future prospects of the SBUs. The company is determined to figure out the best possible strategies to continue or discontinue the different products in the market with respect to the analysis from the BCG matrix. In light of this information answer the following questions.</div>																																																																									
	a.	What category of SBU is the butter of Delight Ltd.? Explain briefly							2																																																																		
		<div>Type your answer here</div> <div>Cash Cow. Cash cows need very little capital expenditure and generate high levels of cash income. The important strategic feature of cash cows is that they are already generating high cash returns, which can be used to finance the stars.</div>																																																																									
	b.	What category of SBU is the fruit juice of Delight Ltd.? Explain briefly							2																																																																		

		Type your answer here Dogs. Dogs are products with a low share of a low growth market. They may be ex-cash cows that have now fallen on hard times. Dogs should be allowed to die, or should be killed off. Although they will show only a modest net cash outflow, or even a modest net cash inflow, they are 'cash traps' which tie up funds and provide a poor return, on investment, and not enough to achieve the organisation's target rate of return.	
	c.	What are stars?	2
		Type your answer here Stars are products with a high share of a high growth market. In the short term, these require capital expenditure, in excess of the cash they generate, in order to maintain their market position, but promise high returns in the future.	

END