**Operations Management**

**NMIMS Centre for Distance and Online Education (NCDOE)**

**Internal Assignment Applicable for June 2025 Examination**

**Q1. A global solar panel manufacturing company is planning to set up a large-scale production facility in South Asia to capitalize on the growing demand for renewable energy and reduce production costs. As the regional head of operations, you are responsible for selecting the most strategic location for the new manufacturing plant. Identify and discuss the key factors that influence the selection of a manufacturing facility location, including economic, logistical, regulatory, and labor-related aspects. Based on these factors, recommend India in South Asia for setting up the facility, providing justifications with relevant data and industry insights to support your decision.**

**Answer:**

**Introduction:**

In this rapidly changing energy environment, solar power is one of the most cost-efficient and sustainable sources of energy. As there is more and more pressure worldwide to decrease carbon emissions and shift to renewable power, solar panel production has become a booming business. Firms want to venture to new markets to reduce the cost of production, invest in fresh markets, and streamline the supply chain. South Asia, with its rising energy demand, good sunlight conditions, and bettering infrastructures, is becoming a hot spot to invest in renewable power. Among all the nations in the region, India is very promising due to economic potential, a skilled workforce, a supportive government, and a strong indigenous market for solar goods.

In their role at a worldwide solar panel firm, where I am a regional operations head, choosing a location to build a new manufacturing plant is a matter of utmost priority. It entails a holistic consideration of many factors like economic conditions, logistics, availability of labor, and regulatory frameworks. These factors not only influence the operational cost and efficiency of the plant but also play a determining role in long-term expansion and scaling. India is the most logical location to establish the manufacturing plant based on a thorough analysis of all the factors. This conclusion is backed by current market trends, governmental policies, and regional potential in renewable energy.

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**Q2. Explain the fundamental concept of TOC and its significance in optimizing pharmaceutical manufacturing processes by identifying common constraints in the industry. Discuss how synchronous manufacturing can be applied to improve production scheduling and efficiency in the pharmaceutical sector. Also Illustrate how the Drum-Buffer-Rope (DBR) methodology can enhance overall system performance, reduce lead times, and increase throughput in pharmaceutical manufacturing.**

**Answer:**

**Introduction:**

In pharmaceutical manufacturing, as in any other sector, ensuring efficiency, quality and timely delivery is critical in an environment that is both competitive and heavily regulated. However, these objectives are difficult to accomplish because of intricate production techniques, strict compliance regulations, procedural order, and process of multi-layered, dynamic demand patterns. The Theory of Constraints (TOC) is an exceptionally impactful management tactic which provides a great deal to a business; it allows the company to find and remove the bottlenecks in its operations as they pertain to finances, thus improving its efficacy as a whole. It concentrates on recognizing the one part of the process which is the slowest in output and would thus have the greatest influence if improved systemically.

As with pharmaceutical companies, so too would other companies benefit significantly from adopting TOC, as operational streamlining with sanctions in place lead to a reduction, as well an improved focus on available products – all without having to make drastic capital expenditures. In this regard, synchronous manufacturing comes into play where every element of execution is scheduled as per the capability of the system’s bottleneck. Nevertheless, precise control of process execution and discipline along with use of the Theory of Constraints, as the name suggests, is Drum-Buffer-Rope (DBR), which is scheduling and execution tool but bases on TOC principles – ensures that the methodology provides improved flow structures and thus control of workflow and better delimiting of independently performed activities (substantial drop in unproductive work).

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**Q3A. Akasa Air, one of India’s newest airline companies, is focused on enhancing service quality and operational efficiency to establish itself in the competitive aviation sector. The use of quality management tools is crucial for maintaining high service standards, ensuring passenger safety, and optimizing operations. Explain the role of an operations manager in implementing and monitoring quality control measures at Akasa Air, focusing on how these measures contribute to safety, efficiency, and customer satisfaction.**

**Answer:**

**Introduction:**

Sustaining high service quality and operational efficiency is essential in the fiercely competitive and fast-paced aviation sector. As a young and expanding airline in India, Akasa Air places a high value on maintaining safety, prompt operations, and first-rate customer service in order to establish a solid reputation. By employing quality management techniques and tools, the operations manager plays a crucial part in accomplishing these objectives. Their responsibility is to ensure the smooth and safe operation of all processes, including maintenance, flight scheduling, and passenger handling. By putting quality control procedures in place and keeping an eye on them, the airline can provide dependable services, win over customers, and differentiate itself in a competitive market.

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**Q3B. Akasa Air, one of India’s newest airline companies, is focused on enhancing service quality and operational efficiency to establish itself in the competitive aviation sector. The use of quality management tools is crucial for maintaining high service standards, ensuring passenger safety, and optimizing operations. Discuss the various dimensions of quality in the airline industry, using Akasa Air as an example. Explain how each dimension contributes to enhancing passenger experience and improving operational efficiency.**

**Answer:**

**Introduction:**

Quality in the airline industry encompasses everything from customer service and on-time performance to safety and comfort, and it goes beyond simply transporting passengers from one location to another. Focusing on various aspects of quality is crucial for a new airline like Akasa Air in order to draw in and keep customers. These factors contribute to the airline's seamless operation, passenger safety, and enjoyable flying experience. In a fiercely competitive aviation industry, Akasa Air can establish a solid reputation as a brand and win over passengers by attending to every little detail.

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