JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- April 2025

BBA IV Semester

COURSE CODE (CREDITS): 24BBWHS431 (4)

MAX. MARKS: 25

COURSE NAME: PRODUCTION AND OPERATIONS MANAGEMENT

COURSE INSTRUCTORS: Prof Amit Srivastava

MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required

for solving problems

Q.No	Question	CO	Marks
		2	2x2 = 4
Q1	Differentiate between: a) Production Management vs Operations Management b) Logistics Management vs Supply Chain Management		
Q2	In the context of increasing global competition and technological advancement, critically examine the evolving nature and scope of production management. How do modern challenges such as sustainability, supply chain disruptions, and changing consumer demands impact traditional production strategies? Discuss with the help of a sector of your choice.	3	4
Q3	Critically analyze the effectiveness of the intermittent production system in meeting customized demand and maintaining production flexibility. How does this system impact cost efficiency, scheduling, and resource utilization compared to continuous production?	3	4
Q4	Critically analyze the significance of understanding product life-cycle costs in strategic decision-making. How does the Westinghouse Curve illustrate the shifting cost commitments during the design and development stages?	4	4
Q5	What is the meaning and objectives of Production Planning and Control? Briefly discuss its different phases along with the activities performed in it.	4	4
Q6	Carefully go through the case given below and answer the questions following thereafter:	5	1x5 = 5

The Rise of Dark Factories -- Transforming Production Management at TechnoFab Inc.

Background:
TechnoFab Inc., a leading electronics manufacturer, faced rising labor costs, demand for faster production, and increasing competition from global markets. To stay competitive, the company adopted a "dark factory" model--an automated production facility that operates with minimal or no human intervention, even in complete darkness.

Transformation:
TechnoFab invested heavily in AI-powered robotics, IoT-based monitoring systems, and predictive maintenance tools. Production lines were redesigned for continuous 24/7 operation. Human roles shifted from operational tasks to system monitoring, maintenance, and strategic planning.

The implementation of the dark factory dramatically reduced lead times, improved product consistency, and cut operational costs by 30%. However, it also brought challenges in workforce reskilling, system integration, and ethical concerns related to job displacement.

Impact on Production Management:
Production managers at TechnoFab had to adopt a more data-driven and strategic role. Traditional concerns like shift scheduling and manual quality checks were replaced by real-time data analysis, automation optimization, and predictive maintenance planning. Cross-functional coordination with IT and data analytics teams became essential.

The dark factory model not only increased efficiency but also redefined the scope of production management--from managing people and machines to managing data, algorithms, and system intelligence.

Questions:
a) How did dark factories change the role of production managers at TechnoFab Inc.?

b) What were the main benefits TechnoFab achieved through the dark factory model?

c) What challenges did TechnoFab face in adopting dark factory practices?

d) How did production management practices evolve with this transformation?

e) What lessons can other manufacturing firms learn from TechnoFab's experience?