PVP21

Code No: **21BA2T4**

I MBA - II Semester - Regular / Supplementary Examinations
JULY 2024

MANUFACTURING AND SERVICES OPERATIONS MANAGEMENT

Duration: 3 Hours Max. Marks: 70

Note: 1. This question paper contains three Parts-A, Part-B and Part-C.
2. Part-A contains 8 short answer questions. Answer any **Five** Questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. Part-C contains one Case Study for 10 Marks.
5. All parts of Question paper must be answered in one place

BL – Blooms Level CO – Course Outcome

PART - A

		BL	CO
1. a)	Name some of the key objectives of Production and Operations Management.	L1	CO1
1. b)	Describe the relationship between a production manager and other departments within an organization.	L2	CO1
1. c)	Identify the primary stages involved in Project Planning and Control (PPC).	L1	CO2
1. d)	Recall the primary objectives of production scheduling and sequencing.	L1	CO2
1. e)	List the basic tools and techniques used for quality management.	L1	CO3

1. f)	Describe the role of statistical process control (SPC) in Six Sigma.	L2	CO3
1. g)	Why is it essential for organizations to establish purchasing policies and procedures?	L2	CO4
1. h)	What are the main types of gaps identified in the Service Quality GAP model?	L1	CO5

PART – B

			BL	CO	Max. Marks
UNIT – I					
2.	a)	Demonstrate the effectiveness of different production and operations management strategies in meeting customer demands.	L3	CO1	5 M
	b)	Identify the some potential causes of inefficiency in production processes, and how can a production manager identify and address them?	L3	CO1	5 M
OR					
3.	a)	Develop a plan for integrating CAD/CAM technology into an existing manufacturing facility to improve productivity and product quality.	L3	CO1	5 M
	b)	Critically evaluate the role of quality management in Production and Operations Management.	L3	CO1	5 M

UNIT – II					
4.	a)	Compare and contrast the advantages and limitations of PERT and CPM methodologies.	L3	CO2	5 M
	b)	Analyze the effectiveness of different scheduling techniques (e.g., MRP, JIT) in PPC for mass, batch, and job order manufacturing.	L4	CO2	5 M
OR					
5.	a)	Imagine you're overseeing a job shop with varying customer demands. How would you use priority rules to sequence job orders effectively?	L3	CO2	5 M
	b)	What are some potential consequences of poor production scheduling and sequencing on overall operational performance?	L4	CO2	5 M
UNIT-III					
6.	a)	Suppose you're tasked with implementing a quality improvement initiative in a manufacturing plant. How would you apply the principles of Total Quality Management (TQM)?	L3	CO3	5 M
	b)	What criteria would you use to evaluate the success of a Six Sigma deployment within an organization?	L3	CO3	5 M
OR					

7.	a)	What are some potential barriers to productivity improvement initiatives, and how can they be analyzed and addressed?	L3	CO3	5 M
	b)	Illustrate the effectiveness of various work design improvement strategies in reducing waste and improving operational efficiency.	L3	CO3	5 M
		UNIT – IV			
8.	a)	Assess the effectiveness of various inventory control measures implemented in stores management in minimizing carrying costs and obsolescence.	L4	CO4	5 M
	b)	Compare and contrast different approaches to setting safety stock levels, such as the fixed quantity method and the reorder point method.	L4	CO4	5 M
		OR			
9.	a)	Critically evaluate the role of technology, such as inventory management software and barcode systems, in enhancing inventory control processes.	L4	CO4	5 M
	b)	Imagine you're tasked with implementing a Just-in-Time (JIT) inventory system in a manufacturing plant. How would you apply JIT principles to streamline inventory management and reduce waste?	L3	CO4	5 M

UNIT – V					
10.	a)	Assess the effectiveness of various strategies for closing the gaps identified in the Service Quality GAP model.	L4	CO5	5 M
	b)	Assess the effectiveness of various service design approaches in meeting customer needs and expectations.	L4	CO5	5 M
OR					
11.	a)	What criteria would you use to evaluate the success of a queue management strategy in a service organization?	L4	CO5	5 M
	b)	Assess the effectiveness of various supply chain performance metrics in measuring supply chain efficiency and effectiveness.	L4	CO5	5 M

PART –C

		BL	CO	Max. Marks
12.	**Case study: Plant layout Design** Alpha, a four -wheeler company, is a leading company in the south manufacturing chassis of bus/lorry, in 600 acres of land with 3000 employees. The annual production capacity of the plant is 60,000 chassis. The market research department projected its future demand to be 2.5 times the present capacity of the plant. So, the company took a decision to set up another	L6	CO2	10 M

	plant in the north with a capacity of 75,000 chassis. It is in the process of procurement of the required land of 1000 acres. The projected number of employees in the new factory would be 4000. The productivity of any company mainly depends on the type of layout that is used to carry out the activities to produce the product. So, the industrial engineering department of the existing company is given the task of design the right type of layout for the new company. All the sections of the automobile company will not have the same type of layout. The final assembly of chassis is done on a powered conveyer belt. This part of the company uses product layout which assemble the necessary subassemblies and components to form a full chassis. The other sections of the company are as follows: Engine assembly, Crank case production, Cylinder Production, Cylinder head production, Piston Production, Connecting Rod production, Gear production (about 40 different gears). The following other items and subassemblies are subcontracted: Radiator, Fuel pump, Fuel injection system(components), Cams, Gear box, Clutch			

	plate, Transmission system (Tie rod, gears, axles, etc.) Wheels and braking system, Tubes and tyres, Horn and electrical system including batteries, Bulb, Doors, Glasses, Body frame and Pannel for drivers' cabin, Bearings, Nuts and Bolts, Cotter pins, Bumpers. Now the company is left with the option of process layout/product layout /group technology layout / fixed position layout for the sections listed in this case. **Questions:** 1. As a consultant to a company, critically examine the material handling activities in each section and accordingly suggest a suitable layout. 2. Also, suggest available software technique to design each layout. 3. Also, give the overall layout of the company which shows the positioning of different sections in relation to the chassis assembly line.			