

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

POST GRADUATE DIPLOMA IN MANAGEMENT (2024-25)
END TERM EXAMINATION (TERM -II)

Subject Name: **Production and Operations Management**

Time: **02.00 hrs**

Sub. Code: **PG24**

Max Marks: **40**

Note: All questions are compulsory. Section A carries 12 marks: 6 questions of 2 marks each, Section B carries 18 marks having 3 questions (with internal choice question in each) of 6 marks each and Section C carries 10 marks one Case Study having 2 questions of 5 marks each.

<u>SECTION - A</u>		
Attempt all questions. All questions are compulsory.		2×6 = 12 Marks
Questions	CO	Bloom's Level
Q. 1: (A). What is the Economic Order Quantity (EOQ) model, and how is it used to optimize inventory management?	CO1	L1
Q. 1: (B). What are the main objectives of Supply Chain Management (SCM)?		
Q. 1: (C). What is the difference between design capacity and effective capacity?		
Q. 1: (D). How does data play a critical role in modern Production & Operations Management?	CO2	L2
Q. 1: (E). How does the Product Life Cycle (PLC) impact decisions in production and operations management?		
Q. 1: (F). What are the key types of layout planning in manufacturing and how do they differ?		
(Three questions each from CO1 & CO2)		
<u>SECTION – B</u>		
All questions are compulsory (Each question has an internal choice. Attempt anyone (either A or B) from the internal choice)		6 x 3 = 18 Marks
Questions	CO	Bloom's Level
Q. 2: (A). How should organizations address issues like supply chain disruptions and environmental sustainability in their operations?	CO3	L3
Or		
Q. 2: (B). Discuss the key challenges organizations face when using target costing to control production costs? How does target costing help organizations to achieve cost control during product development?		
Q. 3: (A). Analyze that the rise of digital technologies and flexible manufacturing systems influenced the shift from mass production to mass customization, further discuss how mass production differ from mass customization in terms of operations, cost, and flexibility?		
Or		
Q. 3: (B). Let us assume that a new medical facility i.e. health care is to be located in Mumbai. The location factors, weights and scores (1= Poor, 5=		

Excellent) for two potential sites are available in the following data set. Calculate the weighted score for these sites. Analyze which location is the best on the basis of Weighted factor rating Method.					CO4	L4
S. No	Location factor	Weights	Score Location 1	Score Location 2		
1	Facility Utilization	25	3	5		
2	Total patients Km per Month	25	4	3		
3	Avg Time per Emergency Trip	25	3	3		
4	Land and construction Cost	15	1	2		
5	Employee Preferences	10	5	3		
<p>Q. 4: (A). How do ordering costs and holding costs impact inventory management decisions? Comment how ABC analysis strategies help in focusing on high-value inventory items and optimizing working capital.</p> <p style="text-align: center;">Or</p> <p>Q. 4: (B). Discuss the difference between MRP-I and MRP-II in material resource planning? How does ERP software integrate inventory management and capacity planning?</p>					CO5	L5

SECTION - C

Read the case and answer the questions

5×02 = 10 Marks

Questions					CO	Bloom's Level
<p>Q. 5: Case Study: The following is the data sheet of measurements for a specific product. Quality Department want to reduce the inspection cost so they are more focused on SQC (Process-Control) Techniques. Quality Manager collected the 14 Samples of Size 4(X1, X2, X3, X4) at different point of time. Analyze the data for process control.</p>					CO6	L6
Sample Number	X1	X2	X3	X4		
1	6	9	10	15		
2	15	16	10	13		
3	12	11	10	10		
4	9	7	8	12		
5	10	4	6	11		
6	7	8	10	5		
7	8	9	6	13		
8	16	10	8	9		
9	8	12	14	16		
10	6	13	9	11		
11	16	9	13	15		
12	7	13	10	12		
13	11	7	10	16		
14	15	10	11	14		

<p>The Constant value of $A=0.729$, $B=0$, $C=2.282$ for evaluating the Control limits</p> <p>Questions:</p> <p>Q. 5: (A). Develop X Bar Chart and Range chart limits for the above Data Set. Plot X Bar Chart and Range chart.</p> <p>Q. 5: (B). Analyze the Charts for the manufacturing process control. Also suggest to the management about the process deficiencies which need to be addressed.</p>		
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Kindly fill the total marks allocated to each CO's in the table below:

COs	Question No.	Marks Allocated
CO1	1	6
CO2	2	6
CO3	3	6
CO4	4	6
CO5	5	6
CO6	6	10

(Please ensure the conformity of the CO wise marks allocation as per your TLEP.)

Blooms Taxonomy Levels given below for your ready reference:

- L1= Remembering
- L2= Understanding
- L3= Apply
- L4= Analyze
- L5= Evaluate
- L6= Create