Roll No...........

GL BAJAJ Institute of Management & Research Greater Noida

FIND YOUR SPARK

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

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

Subject Name: Production, Planning and Control — Time: **02.00 hrs**

Sub. Code: PGO31 — 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 questions in each) of 6 marks each, and Section C carries 10 marks, one Case Study having 2 questions of 5 marks each.

SECTION - A

Attempt all questions. All questions are compulsory. **2×6 = 12 Marks**

Questions	**CO**	**Bloom's Level**
Q. 1: (A). Why is lead time variability a problem for MRP? **Q. 1: (B).** Explain the concept of fundamental process analysis. **Q. 1: (C).** How can product variability affect line balancing? **Q. 1: (D).** How does a job shop differ from mass production? **Q. 1: (E).** What is a planned order in MRP? **Q. 1: (F).** How does inaccurate demand forecasting affect the MPS?	CO1 CO2	

SECTION – B

All questions are compulsory (Each question has an internal choice. Attempt any one (either A or B) from the internal choice) **6 x 3 = 18 Marks**

Questions	**CO**	**Bloom's Level**
Q. 2: (A). What does an imbalanced assembly line look like? With a schematic diagram, explain how imbalancing can be corrected and provide a theoretical solution for improving it. **Or** **Q. 2: (B).** With a suitable diagram, explain how line balancing is needed and important for an optimized production process. How can line balancing be achieved without any over expenses? (internal choices with two questions corresponding to the same CO)	CO3	
Q. 3: (A). A manufacturing company produces eco-friendly water bottles using a five-step process: molding, cooling, trimming, printing, and packaging. The time taken for each step per unit is as follows: molding (6 min), cooling (8 min), trimming (4 min), printing (3 min), and packaging (2 min). The customer demand is 360 bottles per 6-hour shift. Using this information, identify the cycle time and the bottleneck process. Explain how bottleneck analysis helps in improving production efficiency in this case. **Or** **Q. 3: (B).** For the same manufacturing company, discuss what would typically be included in the lead time and how it relates to production, and provide recommendations to align the production process with customer demand.	CO4	

(internal choices with two questions corresponding to the same CO)

Q. 4: (A). What assumptions shall be taken into consideration for getting a basic EOQ model? Explain the limitations due to which EOQ will work effectively. Does EOQ really work out?

CO5

Or

Q. 4: (B). A company needs 3000 kg annually of raw material to produce its products. The cost of Rs 300 incurred to place an order, the cost of raw material is Rs 150 per kg, and the cost of carrying 1 kg of raw material per year is Rs 10. So, calculate EOQ. Also, find how many orders can be placed in a year.

(internal choices with two questions corresponding to the same CO)

SECTION - C

Read the case and answer the questions **5×02 = 10 Marks**

Questions	CO	Bloom's Level
Q. 5: **Case Study:**	CO6	

Green Supply Chain at Eco Fresh Appliances Ltd.

Eco Fresh Appliances Ltd. manufactures energy-efficient refrigerators using an environmentally responsible supply chain. The company emphasizes sustainable sourcing, waste reduction, and energy-efficient operations. The production objective is estimated to be 120 units per day. The production takes place for 8 hours per day.

Workstations in the Assembly Line have the following information:

Workstation	Task Description	Time per Unit (minutes)
1. Frame Assembly	Assembling main frame	6
2. Insulation Fill	Filling eco-friendly foam	8
3. Door Assembly	Attaching the door and seals	10
4. Electrical Fitting	Wiring and electronics	7
5. Quality Testing	Energy efficiency and safety	5
6. Final Packaging	Boxing and labeling	4

Questions:

Q. 5: (A). Calculate takt time, cycle time, and find the bottleneck. Does the actual throughput increase with queuing delays?

Q. 5: (B). Provide an interpretation & bottleneck analysis for the case.

(Entire Sec C to be assigned one CO. Both questions corresponding to the same CO)

Kindly fill in the total marks allocated to each CO's in the table below:

COs	Question No.	Marks Allocated
CO1	Q1	6
CO2	Q1	6
CO3	Q2	6
CO4	Q3	6
CO5	Q4	6
CO6	Q5	10

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

Bloom's Taxonomy Levels are given below for your ready reference:

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