

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

**POST GRADUATE DIPLOMA IN MANAGEMENT (2018-20)  
END TERM EXAMINATION (TERM -IV)**

Subject Name: **Production Planning and Control**

Time: **02.00 hrs**

Sub. Code: **PGO06**

Max Marks: **50**

**Note:**

1. Writing anything except Roll Number on question paper will be deemed as an act of indulging in unfair means and action shall be taken as per rules.
2. All questions are compulsory in Section A, B & C. Section A carries 5 questions of 2 marks each, Section B carries 2 questions of 10 marks each and Section C carries 2 Case Studies of 10 marks each

**SECTION - A**

**02×05 = 10 Marks**

**Q. 1 (A):** What is priority sequencing?

**Q. 1 (B):** How to calculate balance delay in assembly line?

**Q. 1 (C):** Discuss the various basic elements of JIT that must be addressed for successful JIT implementation.

**Q. 1 (D):** What is the role of line balancing in assembly line? How to remove bottleneck?

**Q. 1 (E):** Why is an intermediate range production plan called an 'aggregate' production plan?

**SECTION - B**

**10×02 = 20 Marks**

**Q. 2:** "PPC acts like the brain behind all the production activity, as it acts like thought process in a human body". In the light of this statement discuss the function of production planning and control with help of neat sketch.

**Q. 3:** Discuss transformation process model with reference to a business institute.

**SECTION - C**

**10×02 = 20 Marks**

**Q. 4: Case Study:**

Hyderabad Forgings (HF) does its annual production planning over four quarters. Its demand projections for the coming year shown in Table 4 as follows.

**Table 4: Quarterly demand projections**

Quarter	Demand (tonnes)
I	80
II	120
III	100
IV	90

HF's workforce can produce 70 tonnes of output per quarter. The workforce needs to be increased, but that is going to be a distant plan. Overtime can be used. Of course, the output rate during the overtime period is observed to be 25% greater than that during the regular time. But there is a legal

cap on the overtime limiting it to a minimum time of 20% of the regular time in any quarter. Overtime costs 40% more than the regular time production. HF can subcontract to smaller company in nearby town of Medcherla at a premium of 50 % of the cost of the regular production. The regular time costs are Rs 100,000 per tonne (does not include the cost of materials). Inventory carrying cost is Rs 50,000 per tonne per year. As a management policy, no shortages are allowed.

**(A):** Analyze the case and suggest an economical aggregate production plan for HF. Assume zero inventories of the product at the beginning of the plan year.

**(B):** What is the total production cost for this plan?

**Q. 5: Case Study:**

Mr. Sri Nivasan has recently joined an organization with the capacity of operation manager. He involved in the material management activity and smooth flow of production. He received the requirement of item "X" and item "Y" from various sources as shown in the Table 4 (a) and Table 4 (b) respectively. The beginning inventory levels are 60 and 40 respectively. The economic production run length (EPRL) for 'X' is 90 units and for 'Y' is 50 units. Item 'Y' has an uncertain demand and the company tries to maintain 30 units of safety stock to ensure good service.

**Table 4 (a): Expected demands for item 'X'**

Initial inventory = 60 EPRL = 90	Weeks (Planning horizon)									
	1	2	3	4	5	6	7	8	9	10
Marketing forecast	-	5	30	40	50	40	50	50	50	50
Interplant forecast	-	-	5	-	-	5	-	-	5	-
Customer order	40	40	30	10	10	5	-	-	-	-
Warehouse order	15	10	-	5	-	-	-	-	-	-

**Table 4 (b): Expected demands for item 'Y'**

Initial inventory = 40 EPRL = 50	Weeks (Planning horizon)									
	1	2	3	4	5	6	7	8	9	10
Demand forecast	-	-	5	10	5	5	10	10	15	10
Service forecast	-	-	5	-	10	-	-	10	-	-
Domestic order	10	15	10	10	-	-	-	-	-	-
International order	-	5	-	5	-	5	-	-	-	-

**(A):** You are required to develop the tentative master production schedule for item 'X'

**(B):** Also, develop the tentative master production schedule for item 'Y'.