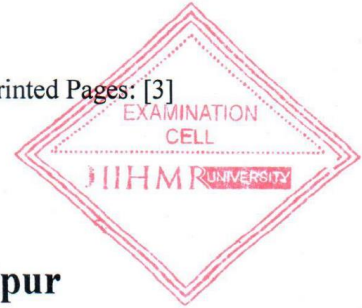




Institute of Health Management Research, Jaipur
MBA Pharmaceutical Management
Batch 7th (2015-17)
SUPPLY CHAIN MANAGEMENT
Term Paper

Duration: 3 hr.

Maximum Marks – 70

Roll No:

Time - 3 Hour

MM-70

The question paper contains 3 printed pages.**Instructions**

The question paper contains 8 questions out of which the candidate is required to **attempt any 5 questions**. All questions carry equal marks.

- Q.1 Explain the model of Pharmaceutical Supply Chain Management in India. Also enumerate the opportunities and challenges in Pharmaceutical Supply Chain Management. (14)
- Q.2 What do you understand by drug quantification? Explain the Morbidity and Consumption methods of quantification of drugs with suitable examples/illustrations. (14)
- Q.3 The details of consumption of paracetamol tablet 500 mg last year at the district drug warehouse is shown below:

2014		IN	OUT	STOCK
1 Jan	OPENING STOCK			10,000
20 Jan	To hospital pharmacy			0
1 Feb	From central store	30,000		30,000
25 Feb	To hospital pharmacy		10,000	20,000
20 Apr	-do-		10,000	10,000
1 Jun	-do-		10,000	0
31 Jul	From central store	50,000		50,000
1 Aug	To hospital pharmacy		10,000	40,000
7 Sep	-do-		10,000	30,000
20 Oct	-do-		10,000	20,000
10 Dec	-do-		10,000	10,000
31 Dec	Closing stock			10,000

- a) What is the recorded consumption for the year? (2)
- b) Has the drug been out of stock? (2)
- c) If so, how long were the stock-out periods? (2)
- d) Which stock-outs require adjustment to be made? (2)

- e) What is the effective period during which the drug has been in stock? (2)
 f) What is the consumption adjusted for stock-outs? (4)
- Q.4 Three warehouses W_1 , W_2 , W_3 are used to stock similar medicines. Orders are received at these warehouses from four hospitals at four different locations H_1 , H_2 , H_3 and H_4 :

Warehouse	Trucks loads on hand
W_1	7
W_2	9
W_3	18

Hospitals	Requirements in Truck loads (monthly)
H_1	5
H_2	8
H_3	7
H_4	14

The distance chart, in terms of shipping distances in km, from warehouse to different locations is given below:

TO FROM	H_1	H_2	H_3	H_4
W_1	19	30	50	10
W_2	70	30	40	60
W_3	40	8	70	20

The average cost of shipping each truck is Rs.10/km.

As the Supply Chain Manager, find out which warehouse should supply which hospital during a month, so that the cost of the shipping is minimized? Also find the minimum total cost. (14)

- Q.5 Unichem Laboratories, one of the India's oldest and largest pharmaceutical company headquartered in Mumbai, Maharashtra, has four warehouses located in a region. The supply chain manager of the company, while studying the distribution network for a particular dosage form (Capsules), has identified three market regions. The relevant data is given in the following table:

Warehouse	Market			Supply
	A	B	C	
1	10	12	7	180
2	14	11	6	100
3	9	5	13	160
4	11	7	9	120
Demand	240	200	220	

It is known that currently known that due to unfavorable weather condition nothing can be sent from warehouse 1 to market A and from warehouse 3 to market C. Solve the problem and determine the least cost transportation schedule.

Is the optimal solution obtained by you unique? If not, what is/are the other optimal solution/s? (14)

- Q.6 (a) What do you understand by inventory management in drug supply system? Explain in brief the technique of ABC and VED classification in improving cost effectiveness in the Supply Chain Management. (6)
- (b) A portion of a hospital pharmacy formulary contains the 8 medications listed below.

Item No.	Description	Unit Price	Annual Consumption
1	Albuterol 0.083% 3ml	200	3,000
2	Alprazolam 1mg	2	60,000
3	Sucralfate 1Gm	5000	20
4	Captopril 50mg	12.5	200
5	Cerumenex	9	350
6	Theophylline	25	6,000
7	Lanoxin 0.25mg 2ml	1000	40
8	Difl unisal 250mg	70	300

Draw an ABC analysis graph after classifying A, B & C class items. (8)

- Q.7 (a) Explain the EOQ model in supply chain management. Also explain the EOQ under quantity discount with one price break. (6)
- (b) A pharmaceutical company in the manufacture of a new drug requires a chemical, for which two potential suppliers have been identified. Firstly a UK supplier who have quoted a price of Rs. 1200 per liter for any order quantity. Secondly an Italian company who have quoted a price of Rs. 1190 per liter for quantities of less than 3000 liters, and Rs. 1100 per liter for orders of 3000 or more liters.
- A virtually constant demand of 3000 liters per year is anticipated. The cost of holding a liter of chemical in deep refrigeration for a year is expected to be 25 % of its purchase cost. The cost of placing an order has been assessed as being Rs. 50,000 per order from either supplier; however, the nature of chemical is such that an insurance cost of Rs. 30,000 per order is expected to be necessary in the case of the Italian supplier.
- From which supplier should the chemical be ordered, and in what quantity? (8)

- Q.8 Write short notes on any two (2) of the following (7+7)
- HR issues in warehousing.
 - Computerized medicines management system.
 - Salient features of GFATM PSM Plan.
