

MCL 361
Major Test

Date: 01-May-2017

Max. Time : 2 hrs
Max. Marks : 35

- NOTE:
- 1 Please answer all Questions.
 - 2 Use only Blue or Black pen for writing answers.
 - 3 Only use of Calculators is permitted. Any other items such as Books, Notes etc are not permitted.,
 - 4 Answers can be in any order, but all parts of a question must be answered together.
 - 5 All answers must be on answer paper only, and on extra sheets, if used..

- Q1 a) Briefly define Inventory Turnover ratio and explain its significance. Marks : 1
- b) A Company dealing in consumer durable products has an annual sales turn over of Rs 200 Crores. Average inventory level in the Company in Rupee value is Rs 25 Crores. Average cost of sales for the Company is 70 % .
Find the inventory turnover ratio for the Company ? Marks : 1.5
- c) The Company has taken up new project of implementing JIT techniques.
If the revised target set by management for inventory is 14 Turns.
Find the target in Rupee value for the Inventory Control Department ? Marks : 1.5
- d) If the Company is divided in two Modules; of Machining and Assembly with Inventory values in ratio of 40% and 60% respectively, find the revised inventory target for Assembly Section. Marks : 1
- Q2 a) What do you understand by Total Cost of Purchasing (or Acquisition) in an Organisation? Explain briefly terms used with help of an equation and diagram. From the equation derive the expression for Economic Order Quantity Q^* , at which total costs are minimum. Marks : 2
- b) Show that at the EOQ value, Q^* , the Cost of Ordering and Cost of Holding inventory are equal. Marks : 1
- c) In a consumer durable manufacturing Company, average production is 7500 units per month. Quantity of a critical part required for assembly is 1 number per product unit. Cost of holding inventory of this part is Rs 75 per unit, and cost of ordering this part from vendor is Rs 150 per order. Calculate the Economic Order Quantity for this item. Marks : 2
- d) What is the economic time between orders, if lead time for supply is 1 days Marks : 1
- Q3 Briefly explain concepts/ philosophy of Just in Time (JIT) What are the four factors considered as pillars of JIT ? How are these exploited by Management to improve operational efficiency and reduce Inventory? Marks : 3
- a) Japanese word "Kanban" in English means.....
Briefly explain its usage/ application. Marks : 1
- b) Japanese word "poka yoke" in English means.....
Briefly explain its usage/ application. Marks : 1

- Q4 a) Explain briefly "F N S D" classification for inventory management.
Give examples where and how this classification is used.

Marks : 2

- b) In Spare Parts Department of an Automobile manufacturing Company, customer orders are received at regular intervals. Material is supplied against respective orders from available inventory. However, sometimes, there are shortages in supply due to few ordered parts not being available in Inventory.

Define two approaches used for determining "Safety Stock"; measuring Customer Satisfaction level, and explain various parameters with help of suitable equations.

Marks : 2

- Q5 a) Explain briefly, what are the four types of reordering rules of managing inventory. Give atleast one example how would you use each of these rules for managing inventory.

Marks : 2

- b) What do you understand by ABC analysis of Inventory classification? Explain the principle applied with help of a figure. Enclosed table gives data of components used in an auto ancillary unit manufacturing Wiper Assembly. Monthly production is 50000 units/month. Place the parts in A and B categories, clearly mentioning the percentage both by value and by number of parts in each category.

Marks : 3

S.No.	Part Name	Value Each	Qty per Vehicle				
		Rs	Nos				
1	K	30	1				
2	L	46	1				
3	M	124	2				
4	N	270	1				
5	P	16	2				
6	Q	74	2				
7	R	27	2				
8	S	12	2				
9	T	3	8				
10	U	28	1				
11	V	4	4				
12	W	2	4				
13	X	7	4				
14	Y	3	4				
15	Z	8	4				

- Q6 a) Define the two methods, Mean Error (or Bias) and Mean Absolute Deviation, used for evaluating forecasting errors. Explain them with help of equations. Compare the two methods, and explain their advantages and disadvantages

Marks : 2

- b) Table below gives actual demand and forecast demand data for 5 periods for a consumer product. Calculate the Mean Error (or Bias) and Mean Absolute Deviation, for the data given. Compare the two and give your comments.

Period		5	6	7	8	9
Actual Demand	nos.	12000	16000	13000	18000	11000
Forecast Demand	nos.	12500	15000	13750	16750	11250

Marks : 3

- Q7 Fill in the Blanks

- For error evaluation given in Question 6 above, statistically it can be shown that for large data base, Standard Deviation is times Mean Absolute Deviation (MAD)
- In "VED" type inventory classification, VED stands for; V.....E.....D.....
- A good ERP System also gives International.....
- Abbreviation SCM commonly used in Manufacturing Operations stands for S.....C.....M.....
- Decoupling point is the point when demand changes from to
- In ESF forecasting technique, ESF stands for E.....S.....F.....
- BOM stands for B..... O..... M
- Inventory is of various types. Write names of any two types of Inventories;
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- In a fast food joint, Pizza or Burger serving is MTS or ATO situation ?.....
- Unit generally used for specifying Cash to Cash Cycle is

Marks : 5