

SVKM'S NMIMS UNIVERSITY
SCHOOL OF DISTANCE LEARNING

PROGRAM (Semester): PGDSCM(II)

Subject: Production/ Operations Management

Date: 31-05-2009 (11.00 a.m. – 2.00 p.m.)

Marks: 100

Time : 3 hrs

Instructions: 1] Attempt ANY FIVE questions out of total nine

2] All questions carry equal [20 each] marks

3] Sub questions 'A' and 'B' if present, carry 10 marks each

4] Use of calculator (non-programmable) permitted.

Q. No: 1 A] Explain the Production System Model and the concept of 'Productivity' and the three basic productivity indices with suitable examples.

B] Define the concept of 'Value' explaining all its components.

Q. No: 2 A] Enumerate the general steps in the forecasting process

B] Differentiate between 'Product Layout' and 'Process Layout'

Q. No: 3 A] State the core logic of JIT concept

B] Enumerate and briefly explain at least five characteristics of Just –In –Time systems.

Q. No:4 A] State the assumptions underlying the basic EOQ model

B] A diesel engine manufacturer buys an item in lots of 500 units which is a three months requirement. The cost per unit is Rs. 90 and the ordering cost is Rs. 180 per batch order. The inventory carrying cost is estimated at 20 % of the average inventory investment.

1] What is the annual total cost of the existing inventory policy?

2] How much money can be saved from economic order quantity purchase.

Q. No: 5 A] Enumerate [only] various quantitative methods of forecasting and explain in detail with a suitable example the Exponential Smoothing method of forecasting demand

B] A manufacturing unit producing electrical appliances require 4,000 switches per year. The ordering cost is Rs 60 per order. The inventory carrying cost is 8 percent of purchase price per unit on an annual basis. The switches are priced as follows:

Range of Order Quantity-units	Unit price applicable—Rs
1 to 499	9.00
500 to 999	8.50
1000 and more	8.00

Find out the optimal order quantity and the total annual cost

Q.No: 6 A] Explain the seven Q.C. tools for problem solving

B] Explain the concept of 'Taguchi Loss Function'

[Continued on page:2]

Q. No: 7 A] Enumerate and briefly explain five important elements of Material Requirement Planning [MRP –I]

B] In an Automobile Manufacturing Co [AMC] a particular casting part X is required 25,000 numbers per year for a model . The foundry [casting manufacturing department] of AMC can produce 250 castings X per day. The set-up cost for a batch of casting X is Rs 30,000 . The cost of holding one casting X for an year is Rs 2,500 .

If the AMC is working for 250 days in an year , calculate the Economic Batch Quantity for production of casting X when gradual [non-instantaneous] replenishment of inventory of casting X is effected.

Q. No: 8 A] Enumerate and briefly explain the six significant causes of reduction of equipment utilization which are dealt with in Total Productive Maintenance [TPM]

B] Explain the concept of Computer Integrated Manufacturing [CIM]

Q. No: 9 Write short notes on [any four]

- 1] Delphi Technique of forecasting demand
- 2] Group Technology [Cellular] Layout
- 3] Computer Aided Design [CAD]
- 4] Optimized Production Technology [OPT]
- 5] Process Capability Index
- 6] ABC analysis in inventory control

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