

Roll No.

Total No. of Questions : 08]

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M.Tech.

MATERIALS MANAGEMENT
SUBJECT CODE : IE - 510 (Elective - I)

Paper ID : [E0619]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 100

Instruction to Candidates:

- 1) Attempt any Five questions.
- 2) All questions carry equal marks.

- Q1)** (a) List and explain the major objectives of purchase department.
(b) Explain the approaches used to organize the purchase function.
- Q2)** (a) Bring out the arguments for and against 'make' or 'buy' decisions. How is the problem of make – or – buy resolved?
(b) You have been given the responsibility of making a study of an existing store room and of taking charge of its reorganization. Outline and explain briefly the approach you would use in planning this undertaking.
- Q3)** (a) List the assumptions in Wilson's model for economic order quantity. Also Derive an expression for economic order quantity and minimum total inventory related costs in case of production rate model.
(b) In an inventory system, the cost of placing an order is Rs. 100 per order. The annual demand is 5000 units and the inventory carrying charges are 20% The item costs Rs. 75 each. Find EOQ and total inventory related costs.
- Q4)** (a) "Inventories are idle resources, but still we carry it". Why?
(b) Discuss the functions of inventory.
(c) Explain the following inventory polices.
(i) Fixed order quantity inventory.
(ii) Fixed order period inventory.
- Q5)** Explain the following terms in detail.
(a) Blanket purchase order.
(b) Speculative buying.
(c) FOB buyers plant.
(d) Vendor rating.

Q6) An industry requires certain item costing Rs. 3.75 each. The annual demand is 24000 units. Average lead time is 6 weeks and the demand per week is 460 with a standard deviation of 50 numbers per week. The company stipulates the policy of maintaining a service level of 95% ($K = 1.64$). Though normal lead time is 6 weeks, it is fluctuating and the maximum lead time that occurred is 10 weeks. The cumulative probability of its occurrence i.e. 7,8,9,10 weeks is 0.25. the ordering cost is Rs. 180 per order and the inventory carrying cost is 30% per annum. Based on the above information, design fixed order quantity inventory system and explain how it operates.

Q7) (a) What is the basic premise of ABC analysis? Explain the step-by-step procedure of ABC analysis.

(b) The following data are available on consumption pattern of certain materials in an organization.

Group	No. of Items	Monthly Consumption (units)	Price/Item (Rs.)
I	40	3000	90
II	20	270	100
III	100	1700	5
IV	200	1500	4
V	60	340	50
VI	300	2500	1
VII	250	2000	2
VIII	30	170	500

Find out the items when

'A' items account for 85% of consumption value

'B' items account for 10% of consumption value

'C' items account for 5% of consumption value

Q8) Explain the following:

- Safety stock
- FSN analysis
- Two bin system
- Inventory turn over ratio

