

Model Questions

M.Com: IIIrd. Semester

Paper. 3-3

Subject: Quantitative Techniques



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For Business decisions.

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Group: A

"Objective types Questions"

Q.No: 01

(A) mark the following statement as 'T' (True) or 'F' (False)

- (i) Decisions taken only on the basis of Quantitative Analysis can be sound and correct.
- (ii) Buffer inventories are held to protect against the uncertainties of demand and supply.
- (iii) A queuing model where customer arrivals are at known intervals and the service time is also certain, is called deterministic model.
- (iv) A replacement is called for whenever new equipment offers more efficient or Economical service than old one or existing one.
- (v) PERT is probabilistic in nature while CPM is deterministic.

(B) Select the correct option:

- (vi) A Dummy activity -----

- (a) is artificially introduced.
- (b) is represented by a dotted time.
- (c) does not consume time
- (d) all the above.

(vii) The order cost per order of an inventory is ₹ 400 with an Annual carrying cost of ₹ 10 per unit. The Economic order quantity (EOQ) for an Annual demand of 2000 units.

- (a) 400 units
- (b) 440 units
- (c) 480 units
- (d) 500 units.

(viii) which of the following best describes queuing theory?

- (a) the study of arrival rates.
- (b) the study of service time
- (c) The study of waiting lines
- (d) the evaluation of service time cost.

(ix) which of the following the elements of a decision include.

- (a) a decision maker
- (b) a set of possible actions.
- (c) a set of possible states that might occur
- (d) all the above

(x) if there are a number of queues, then one may leave one queue and to join another queue, such customer is called

- (a) Balking
- (b) Reneging
- (c) Collusion
- (d) Jockeying

Group: B
Long Questions

Answer any four questions.

Q No. 02 What do you mean by Quantitative Technique? Discuss the role of Quantitative Technique Analysis in Business decision making.
or

What is meant by Quantitative Techniques? Discuss its nature and characteristic features and its scope.
or

What is Quantitative Technique? Briefly Explain different types of Quantitative Technique for Business decision.

Q No. 03 Give a general structure of the Queuing system and explain. Illustrate some Queuing situations.
or

What is a queuing problem? What are the basic characteristics of a queuing system?
or

Q No. 04 What is meant by Replacement Analysis? Briefly Explain the cost which are relevant to decision for replacement of capital assets that deteriorate gradually.
or

What is replacement Analysis? What are reasons for replacement?
or

What do you mean by replacement Analysis? Discuss the problems in replacement equipments.

Q. No 5) What do you mean by inventory management?
 Explain different types of inventories.

or
 What is inventory management? Discuss different types of inventory management systems.

or
 What do you understand by inventory control? Explain the Basis of selective approaches to inventory control.

or
 What is "safety stocks"? Why should it be kept by an organisation. How do you determine it while stock out cost are known and stock out cost are not known.

Q. No 6) Distinguish between PERT and CPM.

Q. No 7) A firm is using a machine whose purchase price is ₹18000. The installation charges amount to ₹3500 and the machine has a scrap value of only ₹6500. Because the firm has a monopoly of this type of work, the maintenance cost in various years is given in the following table.

year	1	2	3	4	5	6	7	8	9
maintenance cost ₹	250	750	1000	1500	2100	2900	4000	4800	6000

The firm wants to determine after how many years should the machine be replaced on economic considerations. Assuming that the machine replacement can be done at the end of year ends.

or

OR

The Simple Engineering Company has a machine whose purchase price is ₹ 80000. The Expected maintenance costs and resale price in different years are as given here.

Year	1	2	3	4	5	6	7
Maintenance cost ₹	1000	1200	1600	2400	3000	3900	5000
Resale value (000 ₹)	75	72	70	65	58	50	45

After what time interval, in your opinion, should the machine be replaced?

Q. No 07 Find out:

- (a) The Economic order Quantity
 - (b) Number of orders to be placed in a year
 - (c) Total variable cost associated with the policy of ordering an amount equal to ₹ 800
 - (d) The re order level.
 - (e) The length of the inventory cycle
- From the following informations.

(i) Annual Demand 9000 units (ii) purchase price per unit is ₹ 2 (iii) its ordering cost is ₹ 40 per order (iv) The inventory carrying charges is 9% (percent) of the inventory value.

Further it is known that the lead time is uniform and equals eight working days. and that the total working days in a year are 300.

Q. No 08 Given the following information on a small project: 'A' is the first activity of the project and precedes the activities B and C. The activity D succeeds both B and C where as only C is required to start activity E. D precedes F while G succeeds E. H is the last activity of the project and succeeds F and G. Draw a network based on this information.