

I Semester M.Com. (FA) Degree Examination, January/February 2019
(CBCS)
Paper – 1.5 : QUANTITATIVE TECHNIQUES FOR ACCOUNTING AND
FINANCE

Time : 3 Hours

Max. Marks : 70

Instruction : Answer all Sections.

SECTION – A

1. Answer **any seven** of the following sub-questions in about **3-4** lines **each**.
Each sub-question carries **two** marks. **(7×2=14)**
- Define Linear Programming.
 - Define Geometric Progression.
 - What is basic feasible solution ?
 - What is opportunity loss table ?
 - What do you mean by probability ?
 - Define the term capital budgeting.
 - What do you mean by Independent Float ?
 - Why EOQ is determined ?
 - Define Simulation.
 - What do you mean by Break Even Analysis ?
 - What do you mean by decision tree analysis ?

SECTION – B

Answer **any four** of the following questions. **Each** question carries **five** marks.

(4×5=20)

- Describe, in brief, some of the important quantitative techniques used in modern business industrial units.
- Explain what is meant by probability distribution of a random variable ?
How is it useful in decision making ?

P.T.O.



4. Sivakumar and Co., manufactures two types of T-shirts, one with collar and another without collar. Each T-shirt with collar yields a profit of Rs. 20, while each T-shirt without collar yields Rs. 30. Shirt with collar requires 15 minutes of cutting and 25 minutes of stitching. Shirt without collar requires 10 minutes of cutting and 20 minutes of stitching. The full shift time is available for cutting in an 8 hour shift, but only 6 hours are available for stitching. Formulate the problem as an LP model to maximize the profit.
5. What do you mean by Risk analysis ? Briefly explain the Risk analysis in Capital Budgeting.
6. A manufacturer buys costing equipment from outside suppliers Rs. 30 per unit. Total annual needs are 800 units. Determine Economic Order Quantity. The following additional data are available :
 - a) Return on Investment 10%
 - b) Rent, Insurance etc. per unit per year Re. 1
 - c) Cost of placing an order Rs. 100.
7. "Simulation is an essentially valuable tool in a situation where the mathematics needed to describe a system realistically is too complex to yield analytical solution". Elucidate.

SECTION – C

Answer **any three** of the following. Each question carries **twelve** marks : (3×12=36)

8. What are the different environments in decision making ? Briefly explain the different decision rules usually adopted in decision-making under condition of uncertainty ?

9. Solve the Linear Programming Problem Graphically.

$$\text{Maximize } Z = 7x_1 + 5x_2$$

Subject to constraints,

$$8x_1 + 4x_2 \leq 20$$

$$2x_1 + 3x_2 \leq 8$$

$$-x_1 + x_2 \leq 2$$

$$x_2 \leq 2$$

Where, $x_1, x_2 \geq 0$.



10. The following are the activities in construction project and time duration.

Activity	Preceding activity	Normal time (days)
1 – 2	–	20
1 – 3	–	25
2 – 3	1 – 2	10
2 – 4	1 – 2	12
3 – 4	1 – 3, 2 – 3	5
4 – 5	2 – 4, 3 – 4	10

- a) Draw the activity network of the project.
 - b) Find the total float and free float for each activity.
11. X is a normal variate with mean 42 and standard deviation 4. Find the probability that a value taken by X is
- a) Less than 50
 - b) Greater than 40
 - c) Between 43 and 46
 - d) Between 37 and 41
12. Write a short notes on the following :
- a) PERT
 - b) Perpetual inventory system
 - c) Model Building.
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