MCOHC-3.2

Sl. No.

III Semester M.Com. Degree Examination, May/June - 2026

COMMERCE

Quantitative Techniques

(CBCS, SLM Semester Scheme)

Course : HC 3.2

Time : 3 Hours **Maximum Marks : 80**

SECTION - A

Answer any Four questions. Each question carries 5 marks. (4×5=20)

1. What are the essential characteristics of a Linear Programming Problem? (LPP)?
2. Mention the different decision-making criteria under uncertainty.
3. What are the importance of replacing assets in Project management?
4. Write a note on Economic Order Quantity (EOQ).
5. Distinguish between Transportation Problem and Assignment Problem.
6. A Project consists of the following activities and their immediate predecessors. Draw network diagram.

Activity	A	B	C	D	E	F
Immediate Predecessor(s)	-	A	A	B,C	C	D,E

SECTION - B

Answer any Three questions. Each question carries 10 marks. (3×10=30)

7. Explain the role of Quantitative Techniques in Business and Industry with suitable examples.
8. Discuss the various types of simulation and their business applications.
9. Explain the replacement model for assets that deteriorate with time.
10. The annual demand for a product is 3600 units with an average of 12 units per day.

    The lead time is 10 days. The ordering cost per order is Rs.20 and the annual carrying cost is 25% of the value of the inventory. The price of the product per unit is Rs.3

    a) What will be the EOQ?

    b) Find optimal order cycle time

    c) If a safety stock of 100 units is considered necessary, what will be the ROL and the total annual cost of inventory which will be relevant to inventory decisions?

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11. A company has six jobs A to F. Each job must pass first through **Machine I** and then through **Machine II** (order same for all jobs). The processing times (in hours) are :

Job	A	B	C	D	E	F
Machine - I	3	6	5	8	4	7
Machine - II	7	4	9	2	6	5

Find the optimum sequence that minimizes the total elapsed time.

SECTION - C

Answer any Two questions. Each question carries 15 marks. (2×15=30)

12. Discuss in detail the Critical Path Method (CPM) and its significance in project scheduling.

13. Critically examine the assumptions, applications, and limitations of Game Theory in business decision-making.

14. Solve the following LPP under simplex method

Max $Z = 8X_1+16X_2$

Sub to $X_1+X_2 \leq 200$

$X_2 \leq 125$

$3X_1+6X_2 \leq 900$

$X_1, X_2 \geq 0$

15. Obtain the initial basic solution using the following methods.

a) Northwest Corner Method

b) Least Cost Method

c) Vogel's Approximation Method

		DESTINATION				
		1	**2**	**3**	**4**	**Supply**
	1	3	1	7	4	300
SOURCES	**2**	2	6	5	9	400
	3	8	3	3	2	500
	Demand	250	350	400	200	1200