

(P.T.O.)

7. For the Hawkins-Simon condition to hold in an input-output model, the matrix of technical coefficients must:
- a) Be square and non-singular
 - b) Be symmetric
 - c) Have non-negative elements
 - d) Have all elements equal to one
8. The Linear Expenditure System is often used to explain:
- a) Income distribution and wealth inequality
 - b) The consumption behaviour
 - c) The demand for public goods
 - d) None of the above.
9. In a monopoly, the price is determined by:
- a) The marginal cost
 - b) The point where marginal cost intersects the demand curve
 - c) The average total cost
 - d) The demand curve at the profit-maximizing output
10. In a payoff matrix, the rows typically represent:
- a) Possible outcomes
 - b) Different states of nature
 - c) Decision alternatives
 - d) Probabilities of outcomes
11. Which of the following best describes the relationship between labour-intensive and capital-intensive technologies in terms of costs?
- a) Labor-intensive technologies typically have higher capital costs than capital-intensive technologies.
 - b) Capital-intensive technologies generally have higher fixed costs but lower variable costs, compared to labour-intensive technologies.
 - c) Labour-intensive technologies always have higher costs than capital-intensive technologies.
 - d) Capital-intensive technologies always result in lower fixed costs than labour-intensive technologies.
12. The indirect utility function is derived from:
- a) The consumer's budget constraint and the consumer's utility function.
 - b) The consumer's income and the prices of goods.
 - c) The total quantity of goods consumed and the consumer's preferences.
 - d) The cost of production of the goods consumed.
13. In perfect competition, productive efficiency occurs when:
- a) Firms produce at the minimum point of their average total cost curve.
 - b) Firms are able to earn positive economic profits in the long run.
 - c) The price is equal to the marginal cost of production.
 - d) The quantity demanded equals the quantity supplied.

14. When using the Slutsky equation, if the income effect outweighs the substitution effect, the consumer will:

- a) Buy less of the good after a price increase.
- b) Buy more of the good after a price increase.
- c) Be unaffected by the price change.
- d) Always switch to a substitute good.

15. Feasible solution to an LPP problem:

- a) Must satisfy all of the problem's constraints simultaneously.
- b) Must be corner point of the feasible region.
- c) Must optimize the value of the objective function.
- d) None of the above.

($15 \times \frac{1}{5} = 3$ weightage)

Part B: Answer any five questions. Each carries one weightage.

- 16. Elaborate on production function.
- 17. Give a short note on homogeneous utility function.
- 18. Explain briefly optimum solution.
- 19. What is Saddle point?
- 20. Give a short note on VES production function.
- 21. Given $U = \alpha Q^\beta$, find MU.
- 22. Elaborate on open input output model.
- 23. How does technological progress effect production function?

($5 \times 1 = 5$ weightage)

Part C: Answer any seven questions. Each carries two weightage.

- 24. Examine CES production function.
- 25. Given revenue function of a monopolist as $R = 200x - 4x^2$ and cost function as $25 + 20x$. Find profit maximizing level of output.
- 26. Use Slutsky equation to calculate the substitution and income effect of price change of a good.
- 27. Define technological matrix and show how it is derived.
- 28. How can technological change in a production function lead to increased efficiency in resource allocation?
- 29. Solve using graphical method:

Maximize $\pi = 6x_1 + 8x_2$

Sub to

$$5x_1 + 2x_2 \leq 40$$

$$6x_1 + 6x_2 \leq 60$$

$$2x_1 + 4x_2 \leq 32$$

$$x_1, x_2 \geq 0$$

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30. Discuss game theory and how does it help in understanding decision making in economics.
31. If the demand for a product is given by $Q = 5P^{-0.5}$, calculate price elasticity of demand at price = 25.
32. Examine Hawkins Simon condition.
33. Explain the decision making under risk and uncertainty.

(7 × 2 = 14 weightage)

Part D: Answer any two questions. Each carries four weightage.

34. What is the condition of profit maximization under monopoly and how does monopolistic equilibrium differ from that of perfect competitive market?
35. Maximize the utility function $U = 4xy - y^2$ subject to constrain $5x + y = 6$.
36. State and prove properties of Cobb Douglas production function.
37. Consider a simple economy with two sectors: Agriculture and Manufacturing. The input-output matrix is given as:

Sectors	Agriculture	Manufacturing	Final Demand
Agriculture	0.1	0.2	500
Manufacturing	0.3	0.4	1000

Find the total outputs requirement of Agriculture and Manufacturing sectors to meet the final demand.

(2 × 4 = 8 weightage)