

M.Sc. Mathematics Sem IV
ME010403 -Mathematical Economics
MCQs

1. Which of the following statements is true about consumer behaviour?
 - a) Consumer behaviour is the study of microeconomics
 - b) Consumer behaviour is the study of macroeconomics
 - c) Consumer behaviour is the study of income analysis
 - d) None of the above

2. Which of the following statements about utility is correct?
 - a) One of the main characteristics of utility is that it is a relative concept
 - b) One of the main characteristics of utility is that it is a subjective concept
 - c) One of the main characteristics of utility is that it is a psychological phenomenon
 - d) All of the above

3. Which of the following concepts is true?
 - a) The ability to satisfy the human wants in a good or service is called its satisfaction
 - b) The ability to satisfy the human wants in a good or service is called its productivity
 - c) The ability to satisfy the human wants in a good or service is called its profitability
 - d) The ability to satisfy the human wants in a good or service is called its utility

4. Which of the following statements is true about the law of equi-marginal utility?
 - a) The law of equi-marginal utility is known as the law of decreasing utility
 - b) The law of equi-marginal utility is known as the law of increasing utility
 - c) The law of equi-marginal utility is known as the law of substitution
 - d) The law of equi-marginal utility is known as the law of contribution

5. Which of the following statements about the addition of utilities is correct?
 - a) The addition of utility that is obtained from all the units of a good or service is called the total utility
 - b) The addition of utility that is obtained from all the units of a good or service is called the additional utility
 - c) The addition of utility that is obtained from all the units of a good or service is called the marginal utility
 - d) The addition of utility that is obtained from all the units of a good or service is called the maximum satisfaction

6. Which of the following statements is true?
 - a) The capability of any commodity to satisfy human wants is known as utility
 - b) The capability of any commodity to satisfy human wants is known as taste
 - c) The capability of any commodity to satisfy human wants is known as consumption
 - d) The capability of any commodity to satisfy human wants is known as quality

7. Which of the following about the relationship between marginal utility and price is correct?
 - a) The marginal utility of a commodity or service must be equal to its price to ensure maximum satisfaction of the consumer

- b) The marginal utility of a commodity or service must be greater than its price to ensure maximum satisfaction of the consumer
 - c) The marginal utility of a commodity or service must be lesser than its price to ensure maximum satisfaction of the consumer
 - d) There is no relationship between the marginal utility of a commodity or service and its price
8. Which of the following is true about the relationship between total utility and marginal utility?
- a) The total utility of a product or service is maximum when the marginal utility is negative
 - b) The total utility of a product or service decreases when the marginal utility is negative
 - c) The total utility of a product or service increases at a decreasing rate when the marginal utility is negative
 - d) None of the above
9. Which of the following statements about the demand curve is true?
- a) The slope of the demand curve is upward from left to right
 - b) The slope of the demand curve is downward from left to right
 - c) The slope of the demand curve is parallel to the X-axis
 - d) The slope of the demand curve is parallel to the Y-axis
10. Elasticity of demand is a _____.
- a) Qualitative statement
 - b) Quantitative statement
 - c) Both a and b are correct
 - d) Both a and b are incorrect
11. Moving along an indifference curve the:
- a) Consumers prefer some of the consumption points to others.
 - b) Marginal rate of substitution for a good increase as more of the good is consumed.
 - c) Marginal rate of substitution is constant.
 - d) Consumers do not prefer one consumption point to another.
12. The slope of the indifference curve is equal to which of the following?
- a) One
 - b) Marginal utility
 - c) Marginal rate of substitution
 - d) None of these
- 13 Why is the indifference curve convex to origin?
- a) Due to continuous decline of marginal rate of substitution
 - b) Due to law of diminishing marginal utility
 - c) Due to monotonic preferences
 - d) Both a and b
14. Which of the following is not the property of indifference curves?
- a) Higher the indifference curves, higher are the level of satisfaction.
 - b) Indifference curve is downward sloping.
 - c) Indifference curve is concave to origin.
 - d) Two indifference curves cannot intersect each other.

15. As we move down the indifference curve from left to right, the slope of the indifference curve tends to which of the following?
- Unity
 - Zero
 - Decline
 - Rise
16. In the indifference map, a higher IC indicates which of the following?
- Lower level of satisfaction
 - Higher level of satisfaction
 - Same level of satisfaction
 - Either higher or same level of satisfaction
17. Two indifference curves cannot cut each other because of which of the following?
- They represent those combinations of two goods that give the same satisfaction.
 - The slope is downwards.
 - Each indifference curve represents a different level of satisfaction.
 - They are convex to origin.
18. An indifference curve is related to which of the following?
- Choices and preferences of consumer
 - Prices of goods X and Y
 - Consumer's income
 - Total utility from goods X and Y
19. An Indifference curve slope down towards right since more of one commodity and less of another result in which of the following?
- Decreasing expenditure
 - Maximum satisfaction
 - Greater satisfaction
 - Same satisfaction
20. Which of the following statements regarding utility is not true?
- It is the want satisfying power of the commodity
 - Utility is measurable
 - It helps a consumer to make choices
 - It is purely a subjective entity
21. Which of the following statements about demand is correct?
- The main factor that affects the demand for a product or a service is its price
 - The main factor that affects the demand for a product or a service is the change in income levels of the consumer
 - The main factor that affects the demand for a product or a service is the taste of a consumer
 - All of the above
22. The Law of Demand is a _____.
- Qualitative statement

- b) Quantitative statement
 - c) Both a and b are correct
 - d) Both a and b are incorrect
23. Indifference curves are _____ to the origin, representing marginal substitution.
- a) Concave
 - b) Convex
 - c) Hyperbolic
 - d) Parabolic
24. Is the Indifference Curve appropriate for a cardinalist or ordinal approach?
- a) Cardinalist approach
 - b) Ordinalist approach
 - c) Both of ordinal approach & Cardinalist approach
 - d) None of the above
25. The budget line depicts how many products a consumer can afford with his limited income indifference curve the combination of two goods that provide
- a) Maximum satisfaction
 - b) an equivalent level of satisfaction.
 - c) Least satisfaction
 - d) None of the above
26. A physical relationship between output and input is called
- a) Utility function
 - b) Output function
 - c) Input function
 - d) Production function
27. The curve that represents the productivity of a factor of production among different factors of production is known as
- a) Productivity curve
 - b) Factor curve
 - c) Input curve
 - d) Output curve
28. The average productivity curve measures the ratio between
- a) Total input to total units of output
 - b) Total output to price of input factors
 - c) Total output to units of input factors
 - d) Total input to price of total output
29. The change in the total production due to a unit change in the factors of production is called
- a) Average productivity
 - b) Marginal productivity
 - c) Unit productivity
 - d) Total productivity

30. The average productivity becomes equal to marginal productivity, when
- Average productivity is maximum
 - Marginal productivity is maximum
 - Marginal productivity is minimum
 - Average productivity is minimum
31. The marginal productivity becomes zero, when
- Total productivity is minimum
 - Total productivity is maximum
 - Average productivity is maximum
 - Average productivity is minimum
32. Which of the following statements is correct regarding the values of marginal productivity
- Takes positive values only
 - Takes non-negative values only
 - Takes any real value
 - Takes negative values only
33. What happens to the productivity function in the stage of increasing returns of the law of variable proportions?
- Only average productivity increases
 - Only marginal productivity increases
 - Only total productivity increases
 - All productivities increase
34. In the stage of diminishing average returns of the law of variable proportions, which of the following happens?
- All the productivities decrease
 - Only marginal productivity decreases
 - Both average & marginal productivities decrease
 - Only total productivity decreases
35. During the stage of absolute diminishing returns of the law of variable proportions, which of the following occurs?
- All the productivities decrease
 - Only total productivity decreases
 - Only average productivity decreases
 - Only marginal productivity decreases
36. The marginal technical rate of substitution is the slope of
- Total productivity curve
 - Isoproduct curve
 - Average productivity curve
 - Marginal productivity curve
37. What is producer's equilibrium?
- Maximising the cost
 - Minimising the output

- c) Maximising cost & minimising output
 - d) Maximising output & minimising cost
38. At the producer's equilibrium,
- a) MRTS equals the ratio of units of factors
 - b) MRTS equals the ratio of productivities
 - c) MRTS equals the ratio of prices of factors
 - d) None of the above
39. When the slope of the isocost line equals the slope of isoproduct curve,
- a) Producer's equilibrium occurs
 - b) Consumer's equilibrium occurs
 - c) Both a) & b) occurs
 - d) None of these
40. The elasticity of substitution determines the ratio between
- a) Change in factor quantity & price
 - b) % change in factor quantities & price
 - c) % change in factor quantity ratio & price ratio
 - d) Factor quantities & their price
41. Which theorem states that, when all the factors of production are increased in a given proportion, the output will also increase in the same proportion?
- a) Cob-Web theorem
 - b) Cobb-Douglas theorem
 - c) Leontief theorem
 - d) Euler's theorem
42. The Euler's theorem is applicable only for
- a) Linear production functions
 - b) Homogeneous production functions
 - c) Non-linear production functions
 - d) Non-homogeneous production functions
43. The Cobb-Douglas production function is a
- a) Linear production function
 - b) Log linear production function
 - c) Non-linear production function
 - d) Exponentially linear production function
44. In the Cobb-Douglas production function, $A = AL^\alpha K^\beta$, the value of $\alpha + \beta$ is
- a) Greater than 1
 - b) Less than 1
 - c) Equal to 1
 - d) Not equal to 1
45. The Cobb-Douglas production function is
- a) Homogeneous of degree 1

- b) Homogeneous of degree greater than 1
 - c) Homogeneous of degree less than 1
 - d) Non-homogeneous
46. The elasticity of substitution of the Cobb-Douglas production function is
- a) 0
 - b) -1
 - c) 2
 - d) 1
47. The Cobb-Douglas production function operates under
- a) Decreasing returns to scale only
 - b) Constant returns to scale only
 - c) Increasing returns to scale only
 - d) All of the above
48. The elasticity of substitution of the C.E.S. production function is a
- a) Constant
 - b) Variable
 - c) Non-constant
 - d) None of these
49. The marginal productivity of the C.E.S. production function is
- a) Equal to 1
 - b) Equal to 0
 - c) Greater than 0
 - d) Less than 0
50. Which are the factors of production considered in C.E.S production function?
- a) Labour and wages
 - b) Capital and wages
 - c) Wages and land
 - d) Labour and capital
51. The input output analysis technique was first propounded in the year
- a) 1941
 - b) 1951
 - c) 1945
 - d) 1955
52. Who put forwarded the idea of input output analysis?
- a) Wassily W. Leontief
 - b) Paul Samuelson
 - c) Robert Solow
 - d) Hyman Minsky
53. The year in which Wassily W. Leontief won the Nobel prize in Economics
- a) 1963

- b) 1983
 - c) 1973
 - d) 1993
54. The analysis of inter industry relations is usually referred to as
- a) Production function
 - b) Economics
 - c) Econometrics
 - d) Input Output Analysis
55. The first economist who attempt an ambiguous use of input output analytic technique
- a) Leontief
 - b) Samuelson
 - c) Groman
 - d) Hyman
56. The money value of the input is firms
- a) Total Cost
 - b) Total Revenue
 - c) Total Debt
 - d) Total Balance
57. The monetary value of the total output is firms
- a) Total Cost
 - b) Total Revenue
 - c) Total Debt
 - d) Total Balance
58. The object or material which is demanded by the entrepreneur is known as
- a) Cost
 - b) Revenue
 - c) Debt
 - d) Input
59. The result or the outcome of the productive effort of a company is called
- a) Output
 - b) Profit
 - c) Debt
 - d) Input
60. The best concept used to analyze the industry relations and interdependencies of the entire economy.
- a) Economics
 - b) Finance
 - c) Econometrics
 - d) Input Output Analysis
61. The input output analysis applies to an economy that is

- a) in equilibrium
 - b) not in equilibrium
 - c) does not depends on equilibrium
 - d) sometimes depends on equilibrium.
62. In input output analysis the production follows
- a) Variable return to scale
 - b) constant return to scale
 - c) does not follows on return to scale
 - d) None of these
63. In Leontief Static model, the relation that illustrates the internal stability or equilibrium of each sector in the economy
- a) Balance equation
 - b) Structure Equation
 - c) Difference equation
 - d) None of these
64. In Leontief Static model, the relation that shows the external equilibrium of each sector or inter sector relationships
- a) Balance equation
 - b) Structure Equation
 - c) Difference equation
 - d) None of these
65. A blended table of various input coefficients is called
- a) Coefficient matrix
 - b) Balance matrix
 - c) Technological matrix
 - d) Structural matrix
66. Name the relation that elaborated by Leontief in order to explain the behavior of the economy in static model
- a) Balance equation
 - b) Structure Equation
 - c) Difference equation
 - d) Fundamental relations of balance and structure
67. The model that illustrates the mutual dependencies of the various industries through technological coefficients in the national economy
- a) Dynamic model
 - b) Static model
 - c) Difference model
 - d) Input output analysis
68. Name the model that is closed by linking the investment part of the final bill of goods to output
- a) Dynamic model
 - b) Static model

- c) Difference model
 - d) Input output analysis
69. Dynamic model has the assumption that each industry produces how many homogeneous products
- a) One
 - b) Two
 - c) Three
 - d) Many
70. In dynamic model how many production techniques are assumed
- a) One
 - b) Two
 - c) Three
 - d) Many
71. In dynamic model the combination of factors of production is
- a) Variable
 - b) Fixed
 - c) Anything
 - d) Can't predict
72. Input output analysis focuses on
- a) Unproductive sector
 - b) Productive sector
 - c) Both
 - d) None
73. Input output analysis
- a) Neglect the factor of substitution
 - b) consider the factor of substitution
 - c) Depends upon the situation
 - d) factor of substitution is immaterial
74. In input output analysis
- a) Final demand sector is dependent
 - b) Final demand sector is independent
 - c) can be both
 - d) Neither
75. In national economic planning the more appropriate input output model is
- a) Leontief model
 - b) Static model
 - c) Dynamic model
 - d) Difference model
76. Which type of equation is suitable for expressing the relationship among the changes when the variable changes continuously?
- a) Difference equation

- b) Mathematical equation
- c) Differential equation
- d) Partial differential equation

77. Which type of equation is suitable for expressing the relationship among the changes when the variable changes discretely?

- a) Difference equation
- b) Mathematical equation
- c) Differential equation
- d) Partial differential equation

78. Which type of equation is suitable for expressing the relationship among the changes when the variable changes discontinuously?

- a) Difference equation
- b) Mathematical equation
- c) Differential equation
- d) Partial differential equation

79. Which type of equation is suitable for expressing the relationship among the changes when the variable changes instantaneously?

- a) Difference equation
- b) Mathematical equation
- c) Differential equation
- d) Partial differential equation

80. Difference equations are frequently used in business analysis and economics, since

- a) Economic data are continuous
- b) Economic data are instantaneous
- c) Economic data are recorded uniformly spaced periods of time
- d) Economic data can be recorded on any duration of time

81. Studies of variable over discrete set of time values is called

- a) Mathematical economics
- b) Mathematical Analysis
- c) Periodic Analysis
- d) Input output analysis

82. The basis of periodic analysis is

- a) Difference equation
- b) Mathematical equation
- c) Differential equation
- d) Partial differential equation

83. When the time period are made smaller and smaller a difference equation approaches to

- a) A constant
- b) Difference equation
- c) Differential equation
- d) Partial differential equation

84. In the functional relationship y_x , the change in y as x changes from x to $x + 1$ is called as

- a) First difference
- b) Second difference
- c) Third difference
- d) Fourth difference

85. In the functional relationship y_x , the change in y as x changes from x to $x + 1$ is

- a) Δy
- b) Δy_{x+1}
- c) $\Delta y_x - 1$
- d) Δy_x

86. In the functional relationship y_x , the change in y as x changes from x to $x + 1$ is

- a) $y_{x+1} + y_x$
- b) $y_{x+1} \times y_x$
- c) $y_{x+1} - y_x$
- d) $y_{x+1} - y_{x-1}$

87. The second difference of y_x is denoted by

- a) $\Delta^2 y_x$
- b) $(\Delta y_x)^2$
- c) $2\Delta y_x$
- d) $\Delta_2 y_x$

88. The second difference of y_x is given by

- a) $y_{x+2} + 2y_{x+1} + y_x$
- b) $y_{x+2} - 2y_{x+1} - y_x$
- c) $y_{x+2} + 2y_{x+1} - y_x$
- d) $y_{x+2} - 2y_{x+1} + y_x$

89. Find $\Delta^2 y_x$ if $y_x = 2x^2 - 3$

- a) 1
- b) 2
- c) 3
- d) 4

90. Find $\Delta^3 y_x$ if $y_x = 3x + 5$

- a) 0
- b) -1

- c) 1
- d) 2

91. Find the order of the difference equation $y_{x+2} - 7y_{x+1} + 5y_x = 3x$

- a) 1
- b) 2
- c) 3
- d) 4

92. Find the order of the difference equation $3y_{x+2} + 4y_{x+1} = 2x$

- a) 1
- b) 2
- c) 3
- d) 4

93. Find the order of the difference equation $18y_{x+2} - 6y_x = 5x$

- a) 1
- b) 2
- c) 3
- d) 4

94. Find the order of the difference equation $18y_{x+3} - 3y_{x+1} + 15y_x = 11x$

- a) 1
- b) 2
- c) 3
- d) 4

95. The general solution of a difference equation is

- a) Unique
- b) Not unique
- c) Differ only by a constant
- d) None

96. Number of arbitrary constants in the general solution of an nth order difference equation is

- a) 0
- b) 1
- c) n
- d) n-1

97. Find $\Delta^2 y_x$ if $y_x = e^x$

- a) e^x
- b) $2e^x(e-1)$
- c) $(e^x)^2$
- d) $e^x(e-1)^2$

98. Find the particular solution of $3y_{x+1} = 3y_x - 7$ if $y_0 = 3$

- a) $3 + 7x$
- b) $3 + \frac{7}{3}x$
- c) $3 - \frac{7}{3}x$
- d) $3 - 7x$

99. Find the particular solution of $6y_{x+1} + 2y_x = 0$ if $y_0 = 2$

- a) $2\left(-\frac{1}{3}\right)^x$
- b) $\left(-\frac{1}{3}\right)^x$
- c) $3\left(-\frac{1}{3}\right)^x$
- d) $-2\left(-\frac{1}{3}\right)^x$

100. The equilibrium value of the difference equation $y_{x+1} = Ay_x + B$ where $A \neq 1$

- a) $\frac{B}{1+A}$
- b) $\frac{A}{1-B}$
- c) $\frac{B}{1-A}$
- d) $\frac{A}{1+B}$

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Answers

No.	Ans	No.	Ans	No.	Ans	No.	Ans	No.	Ans
1	a	6	a	11	d	16	b	21	d
2	d	7	a	12	c	17	c	22	a
3	d	8	b	13	a	18	a	23	b
4	c	9	b	14	c	19	d	24	b
5	a	10	b	15	c	20	b	25	b

No.	Ans	No.	Ans	No.	Ans	No.	Ans	No.	Ans
26	d	31	b	36	b	41	d	46	d
27	a	32	c	37	d	42	b	47	b
28	c	33	d	38	c	43	b	48	a
29	b	34	c	39	a	44	c	49	c
30	a	35	a	40	c	45	a	50	d

No.	Ans	No.	Ans	No.	Ans	No.	Ans	No.	Ans
51	b	56	a	61	a	66	d	71	b
52	a	57	b	62	b	67	b	72	b
53	c	58	d	63	a	68	a	73	a
54	d	59	a	64	b	69	a	74	a
55	c	60	d	65	c	70	a	75	c

No.	Ans	No.	Ans	No.	Ans	No.	Ans	No.	Ans
76	c	81	c	86	c	91	b	96	c
77	a	82	a	87	a	92	a	97	d
78	a	83	c	88	d	93	b	98	c
79	c	84	a	89	d	94	c	99	a
80	c	85	d	90	a	95	a	100	c