

UNIVERSITY OF CALICUT
SCHOOL OF DISTANCE EDUCATION
B Sc. Mathematics (2011 Admission Onwards)
I SEMESTER
Complementary Course

MATHEMATICAL ECONOMICS

QUESTION BANK

1. The demand curve shows the relationship between
 - a. Price and quantity
 - b. Income and quantity
 - c. Consumption and quantity
 - d. Consumption and income
2. The demand for essential good is
 - a. Elastic
 - b. Inelastic
 - c. Relatively elastic
 - d. Relatively inelastic
3. When the elasticity of demand e_p is greater than 1 the demand for good is
 - a. inelastic
 - b. unitary elastic
 - c. relatively elastic
 - d. elastic
4. Arc price elasticity is calculated over a
 - a. range of prices
 - b. price at a point
 - c. period of time
 - d. none of the above
5. The ratio of the percentage change in sales of one product to the percentage change in price of another product is called
 - a. arc price elasticity
 - b. point price elasticity
 - c. cross price elasticity
 - d. income elasticity
6. When the cross price elasticity e_c is less than 0, the goods are
 - a. substitutes
 - b. complementary
 - c. independent
 - d. none of these
7. The point price elasticity of demand e_p is given by
 - a. $\frac{dP}{dQ} \cdot \frac{P}{Q}$
 - b. $\frac{dQ}{dP} \cdot \frac{Q}{P}$
 - c. $\frac{dQ}{dP} \cdot \frac{P}{Q}$
 - d. $\frac{1}{P} \cdot \frac{dQ}{dP}$
8. Perfectly elastic supply curve is
 - a. Parallel to X axis
 - b. Parallel to Y axis
 - c. Sloping curve passing through the origin
 - d. None of the these
9. In the case of a perfectly inelastic supply curve, the elasticity of supply η_s is
 - a. infinity
 - b. one
 - c. greater than 1
 - d. zero

10. At equilibrium, the demand curve and supply curve
 - a. coincide each other
 - b. parallel to each other
 - c. intersect each other
 - d. none of these
11. A discussion on demand always referring to purchases made during _____
 - a. given period of time
 - b. Specified period of time
 - c. both a and b
 - d. None of these
12. The variables in the demand function which are related to price are
 - a. own price of the product
 - b. price of compliment
 - c. price of substitutes
 - d. all the above
13. The law of demand states that
 - a. the higher the price the lower the demand
 - b. the lower the price the higher the demand
 - c. the higher the price the lower the demand and the lower the price the higher the demand
 - d. None of these
14. The variable disposable income y_d stands for
 - a. disposable income
 - b. the amount of money available to pupil to spend
 - c. both a and b
 - d. None of these
15. When the purchases of goods increase with rising levels of income, such goods are called:
 - a. Inferior goods
 - b. normal goods
 - c. giffen goods
 - d. Laxurious goods
16. When the purchases of goods decrease with rising levels of income, such goods are called:
 - a. inferior goods
 - b. normal goods
 - c. giffen goods
 - e. laxurious goods
17. Credit and rate of interest are _____ to the firm.
 - a. endogeneous
 - b. homogeneous
 - c. exogeneous
 - d. none
18. The influence of a change in a product's price on real income is called
 - a. substitution effect
 - b. income effect
 - c. both a and b
 - d. None
19. The influence of a reduction in a product's price on quantity demanded is called
 - a. substitution effect
 - b. income effect
 - c. both a and b
 - d. none
20. In a demand curve price is measured along the
 - a. vertical axis
 - b. horizontal axis
 - c. both a and b
 - d. none
21. In a demand curve quantity demanded is measured along
 - a. vertical axis
 - b. horizontal axis
 - c. both a and b
 - d. none

22. The tabular presentation of price and quantity with reference to a demand function is called
- a. demand curve
 - b. demand line
 - c. demand schedule
 - d. none
23. When the demand curve shifts to right, there occurs
- a. an increase in demand
 - b. decrease in demand
 - c. demand is constant
 - d. none
24. A shift of the whole demand curve to the left indicates
- a. an increase in demand
 - b. decrease in demand
 - c. demand is constant
 - d. none
25. The variable that cause a change in demand are called
- a. independent variable
 - b. shifter variables
 - c. exogeneous variable
 - d. none
26. The broadest measure of income generated in the economy is called
- a. GNP
 - b. NNP
 - c. GDP
 - d. Index number
27. The magnitude of the response of the quantity to a price change is measured by
- a. price elasticity
 - b. income elasticity
 - c. supply elasticity
 - d. none
28. The average responsiveness of the dependent variable to changes in the independent variable over some interval is measured by
- a. point elasticity
 - b. arc elasticity
 - c. supply elasticity
 - d. none
29. The absolute value of price elasticity of demand e_p is greater than 1 indicates that demand is
- a. inelastic
 - b. unitarily elastic
 - c. zero
 - d. elastic
30. When the coefficient of cross price elasticity for two products is negative, the products are classified as:
- a. substitutes
 - b. compliments
 - c. normal
 - d. none
31. When the cross price elasticity is positive, the products are:
- a. substitutes
 - b. compliments
 - c. normal
 - d. none
32. When the cross price elasticity $e_c = 0$, the goods are
- a. substitutes
 - b. complements
 - c. normal
 - d. independent
33. The elasticity of demand at different points on the same demand curve is:
- a. same
 - b. zero
 - c. different
 - d. none

34. The range of elasticity of supply is:
a. 0 to 1
b. -1 to +1
c. $-\infty$ to $+\infty$
d. 0 to ∞
35. The unitary elastic supply curve passes through the
a. origin
b. x axis
c. y axis
d. none
36. When the elasticity of supply $\eta_p^s = 0$, the supply curve will be
a. parallel to x axis
b. passing through origin
c. parallel to y axis
d. none
37. For a more elastic supply curve, the value of η_p^s is
a. less than 1
b. more than 1
c. equal to 1
d. zero
38. For a less elastic supply curve, η_p^s is
a. less than 1
b. more than 1
c. equal to 1
d. zero
39. For a unitary elastic supply curve, η_p^s is
a. less than 1
b. more than 1
c. equal to 1
d. zero
40. For a perfectly inelastic supply curve, η_p^s is
a. less than 1
b. more than 1
c. equal to 1
d. zero
41. The total of the quantities demanded by all consumers in an economy at each price is called:
a. market demand curve
b. market supply curve
c. market equilibrium
d. none of these
42. The price elasticity of demand of the demand function $Q = 400 - 4P$ at $P = 10$ is
a. 0.11
b. 0.10
c. -0.11
d. -1
43. When $|e_p| < 1$, the demand is
a. elastic
b. inelastic
c. unitarily elastic
d. none
44. Cross price elasticity may not always be
a. symmetrical
b. asymmetrical
c. both a and b
d. none
45. Luxury goods are:
a. price inelastic
b. price elastic
c. both a and b
d. none

46. If close substitutes are available, then the elasticity of demand will be
 - a. low
 - b. moderate
 - c. high
 - d. optimum
47. The relationship between supply and price is
 - a. negative
 - b. perfect
 - c. positive
 - d. none
48. The relationship between demand and price is
 - a. positive
 - b. negative
 - c. perfect
 - d. none
49. A given percentage change in price results in an equal percentage change in sales, indicates:
 - a. unitary price elasticity
 - b. inelastic price elasticity
 - c. elastic price elasticity
 - d. none
50. When X is the independent variable and Y is the dependent variable their elasticity E is given by
 - a. % change in X / % change in Y
 - b. % change in Y / Y
 - c. % change in X / Y
 - d. % change in Y / % change in X
51. The cost function expresses the relationship between
 - a. price and quantity
 - b. input and cost
 - c. output and cost
 - d. output and input
52. Profit is equal to total revenue minus
 - a. explicit costs
 - b. implicit costs
 - c. implicit costs and explicit costs
 - d. wages and rents
53. Total cost function is a _____ function of output
 - a. linear
 - b. cubic
 - c. quadratic
 - d. none of these
54. MC curve cuts AVC and AC curves at the _____ point
 - a. minimum
 - b. maximum
 - c. both (a) and (b)
 - d. none of these
55. Cost elasticity E_c is given by
 - a. $\frac{dc}{dq} \cdot \frac{q}{c}$
 - b. $\frac{MC}{AC}$
 - c. $\frac{\Delta c/c}{\Delta q/q}$
 - d. All of the above
56. Elasticity of average cost E_{AC} is equal to:
 - a. $E_{AC} = E_C + 1$
 - b. $E_{AC} = E_C - 1$
 - c. $E_{AC} = E_C \pm 1$
 - d. none of these
57. If total cost elasticity E_c is less than 1, then
 - a. $MC > AC$
 - b. $MC = AC$
 - c. $MC < AC$
 - d. $MC = TC$

58. Marginal revenue of the revenue function $TR = PQ$ is
- $\frac{d(TR)}{dQ}$
 - $P + Q \frac{dP}{dQ}$
 - $P \left(1 + \frac{QdP}{PdQ} \right)$
 - All of the above
59. The elasticity of demand η_d in terms of AR and MR is
- $\frac{AR - MR}{AR}$
 - $\frac{AR - MR}{MR}$
 - $\frac{MR}{AR - MR}$
 - $\frac{AR}{AR - MR}$
60. When demand is unitary elastic, then
- $\eta_d = 1, MR = 0$
 - $\eta_d = 0, MR = 1$
 - $\eta_d = -1, MR = 0$
 - $\eta_d = 0, MR = -1$
61. Sum of explicit cost and implicit cost gives:
- total cost
 - average cost
 - marginal cost
 - none of these
62. A distinction between cost of production and expenses of production is made by
- Engel
 - Marshall
 - Keynes
 - none of these
63. Cost is a function of _____
- price
 - revenue
 - quantity
 - none of these
64. An example of fixed inputs of production is _____
- land
 - organisation
 - both a and b
 - none of these
65. Total variable cost plus total fixed cost gives
- total cost
 - average cost
 - marginal cost
 - none of these
66. Marginal cost of a function $c = f(q)$ is _____
- dc/dq
 - $f'(q)$
 - both a and b
 - none of these
67. The ratio of total cost to the quantity produced is called
- average cost
 - marginal cost
 - total variable cost
 - none
68. A firm decide to discontinue production and accept a loss equal to it fixd cost when
- loss $>$ FC
 - loss $<$ FC
 - loss = FC
 - none

69. Minimum cost of producing each output level when the plant size can be freely varied is called
- short run total cost
 - long run total cost
 - total cost
 - none of these
70. The ratio of the proportionate change in average cost to the proportionate change in output is called elasticity of
- marginal cost
 - total cost
 - average cost
 - none
71. When marginal cost is greater than average cost, the total cost elasticity will be:
- greater than 1
 - less than 1
 - equal to 1
 - none
72. The product of the price p and quantity demanded q is called
- average revenue
 - marginal revenue
 - total cost
 - total revenue
73. The ratio of the total revenue to the quantity demanded is
- price
 - average revenue
 - TR/Q
 - all the above
74. The expression of $P + Q(dP/dQ)$ w.r.t. total revenue function $TR = PQ$ gives
- average revenue
 - marginal revenue
 - elasticity
 - none
75. The equation $\eta_p = \frac{AR}{AR - MR}$ indicates that marginal revenue as a function of
- elasticity of demand
 - average revenue
 - both a and b & None
 - None
76. The profounder of the Law of equimarginal unity is
- Fisher
 - Clark
 - Marshall
 - Carl Menger
77. The indifference curves for perfect substitutes are
- Straight lines
 - L-shaped
 - Curves
 - Concave from above
78. The equilibrium of a consumer purchasing one commodity is attained when
- $\frac{du}{dQ} < P$
 - $\frac{du}{dQ} = P$
 - $\frac{du}{dQ} > P$
 - $\frac{du}{dQ} = 0$
79. Combination of goods on a lower indifference curve yield a _____ utility.
- Lower
 - Higher
 - No utility
 - None of these

80. Which of the following is correct:
- Indifference curves slopes downward to the right
 - Indifference curves do not intersect
 - Indifference curves are convex to the origin
 - All the above.
81. Indifference curve approach is based on
- Cardinal number
 - Ordinal number
 - Lagragian multiplier
 - None of the above
82. The first order condition for utility maximization gives:
- $\frac{MU_1}{MU_2} = \frac{P_1}{P_2}$
 - $\frac{MU_1}{P_2} = \frac{MU_1}{P_1}$
 - $\frac{MU_2}{MU_1} = \frac{P_1}{P_2}$
 - None of the above
83. An attribute possessed by a commodity to satisfy a human want, to yield satisfaction to consumer is termed as
- utility
 - preference
 - want
 - None of these
84. Total utility is the aggregate of _____
- average utilities
 - marginal utilities
 - cardinal utilities
 - None of these
85. The point at which the marginal utility first increases, reaches the maximum, then diminishes is called
- point of inflexion
 - minimum point
 - saturation point
 - None of these
86. The second order condition for maximising utility is
- $\frac{du}{dq_1} = 0$
 - $\frac{d^2u}{dq_1^2} > 0$
 - $\frac{d^2u}{d^2q_1} < 0$
 - $\frac{d^2u}{da_1^2} = 0$
87. The locus of the curve joining all commodity combinations giving the consumer the same level of satisfaction is called
- marginal utility
 - indifference curve
 - cost curve
 - None of these
88. An indifference map is a collection of
- indifference curves
 - cost curve
 - revenue curve
 - None of these
89. Indifference curves are _____ to the origin
- concave
 - increasing
 - convex
 - None of these

90. The rate at which the consumer trades off one commodity for another is called
- Marginal rate of technical substitution
 - Marginal rate of substitution
 - equi-marginal utility
 - None of these
91. The concept of indifference curves was developed by
- J.R. Hicks
 - R.G.D. Allen
 - J.R. Hicks and Allen
 - None of these
92. When marginal rate of substitution is equal to the slope of the price line ____ is attained
- equilibrium
 - maximum
 - minimum
 - None of these
93. In the function $V=f(q_1, q_2, \lambda)$, λ is called
- Income multiplier
 - Lagrange's multiplier
 - Impact multiplier
 - None of these
94. According to whom the indifference curve analysis can be transformed into the utility analysis
- J.R. Hicks
 - R.G.D. Allen
 - Prof. Leftwich
 - None
95. The function $v = f(q_1, q_2) + \lambda(y - p_1q_1 - p_2q_2)$ is used for maximising utility according to
- Lagrange
 - Allen
 - Hicks
 - None of these
96. Let $100 + 10k - k^2$ be a production function, where k represents capital. Then the marginal productivity when $k = 2$ is
- 116
 - 6
 - 58
 - 232
97. The inflexion points of the function $y = x^3 - 3x^2 + 5$ is at
- 3
 - 6
 - 1
 - 0
98. If marginal revenue is Rs.25/- and elasticity of demand w.r.t price is 2, then the average revenue is
- 50
 - 25
 - 75
 - 100
99. The problem of constrained optimisation of function in several variables, generally uses
- The Lagrangean function
 - The linear function
 - The quadratic function
 - The exponential function

100. The output of a firm, with given prices of factors of production is decided so that the total cost is
- Maximum
 - Balanced
 - Minimum
 - Positive
101. The minimal value of the function $y = x^4 - 4x^3 + 16x$ is at
- 1
 - 2
 - 2
 - 1
102. For two goods 1 and 2, if $E_{12} > 0$ implies that the two goods are
- Complementary
 - Substitutes
 - Supplementary
 - Giffen goods
103. If $f_{xx}f_{yy} < (f_{xy})^2$ when f_{xx} and f_{yy} are of the same sign, then the function is at
- Minimum point
 - Maximum point
 - Inflexion point
 - Saddle point
104. If $f_{xx}f_{yy} < (f_{xy})^2$ when f_{xx} and f_{yy} are of the different signs, then the function is at
- Minimum point
 - Maximum point
 - Inflexion point
 - Saddle point
105. The theory of investment multiplier was developed by
- R.F. Khan
 - J.M. Keynes
 - Lagrange
 - None of these
106. The ratio of marginal function to average function is called
- elasticity
 - equilibrium
 - rate of change
 - None
107. When the slope of the demand $\frac{dq}{dp}$ is negative, the elasticity is
- positive
 - negative
 - zero
 - None
108. For the demand function $q = 30 - 4p - p^2$ the elasticity of demand when $p=3$ is
- $\frac{9}{8}$
 - 1
 - $\frac{8}{9}$
 - None of these
109. When $Q = g(L)$ and $R = f(Q)$, the marginal revenue product of labour MRP is
- $f^1(Q) \times g^1(L)$
 - MR x MPP
 - $f^1(L) \times g^1(Q)$
 - both a and b
110. The ratio of marginal cost of variable factor to marginal product is
- Marginal physical product
 - Marginal product
 - Marginal cost
 - None of these

111. For a function $Q = f(L)$, $\frac{dQ}{dL}$ is called
- marginal product of labour
 - marginal product
 - marginal physical product
 - None of these
112. A change in consumption expenditure due to an infinitesimal change in the level of income is called
- MPS
 - MPC
 - MPP
 - None of these
113. The situation in which a manufacturer will try to increase his production is
- slope >0 and $MC < AC$
 - Slope <0 and $MC > AC$
 - slope <0 and $MC < AC$
 - slope >0 and $MC > AC$
114. The ratio of capital to labour is called
- average product of labour
 - average product of capital
 - factor intensity
 - None of these
115. When the average revenue function is $AR = 10 - 0.5q$, the marginal revenue is
- $0.5q^2$
 - $10 - q$
 - $10q - 0.5$
 - None
116. For a function $y = f(x)$, $x_1 \geq x_2 \Rightarrow f(x_1) \geq f(x_2)$ says that the function is
- increasing
 - decreasing
 - constant
 - None of these
117. The points at which a curve is neither increasing nor decreasing is called
- turning point
 - stationary points
 - both a and b
 - None of these
118. For maximum of a function $y = f(x)$, De must have
- $\frac{dy}{dx} = 0$; $\frac{d^2y}{dx^2} < 0$
 - $\frac{dy}{dx} = 0$; $\frac{d^2y}{dx^2} > 0$
 - $\frac{dy}{dx} < 0$; $\frac{d^2y}{dx^2} = 0$
 - None of these
119. For profit maximisation we must have
- $MR = MC$
 - MC Curve cut MR curve from below
 - both a and b
 - None of these
120. For the function one condition for getting points of inflexion is
- $f'(d) = 0 / x$
 - $f''(x) = 0$
 - $f'''(x) = 0$
 - None of these
121. For the function $y = 4x_1x_2 + x_1^3 + 2x_2^2$, the partial derivative $\frac{\partial y}{\partial x_1}$ is
- $4x_2 + 3x_1^2$
 - $4x_1 + 3x_1^2$
 - $4x_1 + 4x_2$
 - None of these

122. For the function $y = 10 + 2x_1^2x_2 + 3x_2^2x_3^3$, the value of f_{22} is
- a. $6x_2^3$
 - b. $6x_3^3$
 - c. $2x_1^2 + 6x_2$
 - d. None
123. For a function $y = f(x_1, x_2)$, the total differential is given by
- a. $dy = f_1dx_1 + f_2dx_2$
 - b. $dy = f_1dx_2 + f_2dx_1$
 - c. both a and b
 - d. None of these
124. The nature of tax multiplier is
- a. positive
 - b. zero
 - c. negative
 - d. None
125. For the production function $Q = 6x^2 + 3xy + 2y^2$ the value of MPP_x is
- a. $3x + 4y$
 - b. $12x + 4y$
 - c. $12x + 3y$
 - d. None

Answers:

- | | | | | | | | |
|------|---|------|---|------|---|------|---|
| 1. | a | 2. | b | 3. | d | 4. | a |
| 5. | c | 6. | b | 7. | c | 8. | a |
| 9. | d | 10. | c | 11. | c | 12. | d |
| 13. | c | 14. | c | 15. | b | 16. | a |
| 17. | c | 18. | b | 19. | a | 20. | a |
| 21. | b | 22. | c | 23. | a | 24. | b |
| 25. | b | 26. | c | 27. | a | 28. | b |
| 29. | d | 30. | b | 31. | a | 32. | d |
| 33. | c | 34. | d | 35. | a | 36. | c |
| 37. | b | 38. | a | 39. | c | 40. | d |
| 41. | a | 42. | c | 43. | b | 44. | a |
| 45. | b | 46. | c | 47. | c | 48. | b |
| 49. | a | 50. | d | 51. | c | 52. | c |
| 53. | b | 54. | a | 55. | d | 56. | b |
| 57. | c | 58. | d | 59. | d | 60. | c |
| 61. | a | 62. | b | 63. | c | 64. | c |
| 65. | a | 66. | c | 67. | a | 68. | a |
| 69. | b | 70. | c | 71. | a | 72. | d |
| 73. | d | 74. | b | 75. | a | 76. | c |
| 77. | a | 78. | b | 79. | a | 80. | d |
| 81. | b | 82. | a | 83. | a | 84. | b |
| 85. | c | 86. | c | 87. | b | 88. | a |
| 89. | c | 90. | b | 91. | c | 92. | a |
| 93. | b | 94. | c | 95. | a | 96. | b |
| 97. | c | 98. | a | 99. | a | 100. | d |
| 101. | b | 102. | a | 103. | b | 104. | b |
| 105. | a | 106. | a | 107. | 6 | 108. | c |
| 109. | d | 110. | c | 111. | a | 112. | b |
| 113. | c | 114. | c | 115. | b | 116. | a |
| 117. | c | 118. | a | 119. | c | 120. | b |
| 121. | a | 122. | b | 123. | a | 124. | b |
| 125. | c | | | | | | |

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