

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

MATHEMATICAL ECONOMICS

QUESTION BANK

1. Which of the following is a measure of inequality in variables
 - a. Lorenz curve
 - b. Coefficient of variation
 - c. Pareto distribution
 - d. all the above
2. Which of the following is a graphical method of measuring inequality
 - a. Lorenz curve
 - b. Mean deviation
 - c. Lognormal distribution
 - d. None of these
3. _____ is a measure of inequality in variables.
 - a. Binomial distribution
 - b. Poisson distribution
 - c. Pareto distribution
 - d. None of these
4. An increase in a personal command over resources during a given period of time is called
 - a. Profit
 - b. Income
 - c. Consumption
 - d. None of these
5. While drawing Lorenz curve, cumulative percentage of income is taken along the
 - a. X-axis
 - b. Y-axis
 - c. XY plane
 - d. None of these
6. The line joining (0,0) to (100,100) in a Lorenz Curve is called
 - a. Line of equal distribution
 - b. sloping line
 - c. Line of perfect inequality
 - d. None of these
7. The farther the Lorenz curve from the line of equal distribution, the inequality in income.
 - a. Lesser
 - b. Poorer
 - c. greater
 - d. moderate
8. The divergence between Lorenz curve and line of perfect equality can be measured by
 - a. Gini coefficient
 - b. Correlation coefficient
 - c. Coefficient of variation
 - d. None of these
9. The range of the Gini coefficient is
 - a. -1 to +1
 - b. $-\infty$ to $+\infty$
 - c. 0 to 1
 - d. -1 to 0

10. The area between the line of perfect equality and the Lorenz curve divided by the area of the triangle below the line is the
 - a. Gini index
 - b. Pareto index
 - c. Paasche's index
 - d. None of these
11. Lorenz curve is named after
 - a. R.A. Fisher
 - b. Amartya Sen
 - c. Max O' Lorenz
 - d. Pareto Wilfred
12. Lorenz curve is an indicator for the distribution of two factors
 - a. being equal
 - b. being unequal
 - c. both a and b
 - d. neither a nor b
13. In LPP, the simplex method was developed by
 - a. Koopman
 - b. G.B. Dantzig
 - c. Leontief
 - d. None of these
14. In LPP the transportation problem was contributed by
 - a. Leontief
 - b. Koopman
 - c. G.B. Dantzig
 - d. None
15. In LPP, the diet problem was introduced by
 - a. Stigler
 - b. G.B. Dantzig
 - c. Koopman
 - d. Non
16. With regard to the requirements of LPP, the limited resources are usually expressed as
 - a. objective function
 - b. Decision variables
 - c. constraints
 - d. None
17. Which of the following is an assumption of LP.
 - a. certainty
 - b. Divisibility
 - c. Additivity
 - d. All the above
18. _____ is a primary requirement of a LP
 - a. Continuity
 - b. Linearity
 - c. Additivity
 - d. None
19. Which of the following is required to formulate a LPP
 - a. objective function
 - b. decision variables
 - c. constraints
 - d. All the above
20. Any non negative value of (x_1, x_2) is a _____ of the LPP if it satisfies all the constraints.
 - a. feasible region
 - b. critical
 - c. feasible solution
 - d. None
21. The collection of all feasible solution is called
 - a. feasible region
 - b. critical region
 - c. optimal solution
 - d. None

22. Any non negative value of (x_1, x_2) is a feasible solution of the LPP if it satisfies all the _____
- a. non negativity conditions
 - b. constraints
 - c. objective function
 - d. None
23. A linear inequality in two variables is known as a _____
- a. half plane
 - b. Closed half plane
 - c. XY plane
 - d. None
24. The optimal solution any LPP corresponds to one of the _____ of the feasible region.
- a. turning points
 - b. corner points
 - c. maximum point
 - d. None
25. LP is a quantitative technique of decision making using _____ constraints
- a. inequality
 - b. equality
 - c. both and b
 - d. None
26. In which of the following fields, LP can be used as a technique of decision making.
- a. production
 - b. marketing
 - c. financial
 - d. None
27. In LPP we deal with _____ objectives
- a. many
 - b. only one
 - c. two
 - d. None
28. One of the limitations of LPP is to satisfy the assumption of _____ of objective function and constraints.
- a. certainty
 - b. continuity
 - c. linearity
 - d. None
29. Extreme points w.r.t & LPP are also known as
- a. vertices
 - b. corner points
 - c. both a & b
 - d. None
30. LPP where the objective function coincides with one of half planes generated by a constraint will possess _____
- a. multiple solution
 - b. unique solution
 - c. both a and b
 - d. None
31. If no feasible solution of the problem exists, then that LPP is said to be
- a. unbounded
 - b. bounded
 - c. infeasible
 - d. feasible
32. An unbounded solution of a LPP is a solution whose objective function is
- a. finite
 - b. unique
 - c. infinite
 - d. None
33. The effect of changes in the coefficient in the optimum value of the objective function can be studied through a technique called

45. _____ Variables can convert greater than or equal to type constraints into equations.
- a. Surplus variables
 - b. Slack variables
 - c. basic variables
 - d. None
46. If in the course of simplex computation $Z_j - C_j < 0$ but $y_{ij} \leq 0$ for all i , then the problem has _____
- a. one finite solution
 - b. no finite solution
 - c. both a and b
 - d. None
47. The number of _____ in the primal problem is equal to the number of dual variables
- a. Objective function
 - b. non negativity condition
 - c. constraints
 - d. None of these
48. If the primal problem is a maximisation problem, then the dual problem is a _____ problem
- a. minimisation
 - b. transportation
 - c. assignment
 - d. none
49. An _____ is a non negative variable introduced to introduced to facilitate the computation of an initial basic feasible solution.
- a. optimal variable
 - b. artificial variable
 - c. both a and b
 - d. None
50. The _____ problem is the original linear programming problem
- a. dual
 - b. Transportation
 - c. primal
 - d. None
51. The method of solving LPP with greater than or equal to type constraints is:
- a. Two phase method
 - b. M method
 - c. both a and b
 - d. None
52. _____ is a quantitative measure of satisfaction a person gets at the end of the game:
- a. pay off
 - b. strategy
 - c. game theory
 - d. none
53. Two person matrix game is always a _____ game
- a. positive sum
 - b. negative sum
 - c. zero sum
 - d. none
54. The set of all possible pay offs displayed in a table is called
- a. zero matrix
 - b. pay off matrix
 - c. unit matrix
 - d. none
55. When both players use their optimal minimax strategies the resulting expected pay off is called
- a. Two person game
 - b. zero sum game
 - c. value of the game
 - d. none

79. Unique solution in a LP problem can be found
- Within the feasible region
 - Outside the feasible region
 - Corner of the feasible region
 - Border of the feasible region
80. Linear programming deals with –
- Minimization
 - Maximization
 - Minimization and maximization
 - Production analysis
81. For a LPP, if there is a tie in the net evaluation row of the simplex table corresponding to an iteration
- The tie should be broken before proceeding further
 - We can choose any one and proceed
 - It means something has gone wrong
 - The solution may cycle round
82. A LPP is infeasible, if the simplex table corresponding to the final iteration has
- A net contribution row with all zeros
 - A solution column containing some artificial variables
 - Both the above
 - None of the above
83. In a LPPP, a feasible setoff solutions is one which satisfy
- The objective function
 - The constraints
 - Both the above
 - None of the above
84. In linear programming the number of constraints in the dual of a given primal problem is
- The number of variables in the primal
 - The number of constraints in the primal
 - The number of constants in the primal
 - None of the above
85. In a linear programming problem
- The objective function must be linear
 - The constraints must be linear
 - Both the objective function and constraints should be linear
 - There always exist one optimal solution
86. Every basic feasible solution of LPP is ----- of the convex set of feasible solutions.
- Maximum point
 - Minimum point
 - Extrimum point
 - None of the above
87. A mathematically fair game is one in which the expected value of the game is
- One
 - Negative
 - Zero
 - Positive

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88. A game theory must have the following elements
- a. Players, strategies and pay offs
 - b. Strategies and pay offs
 - c. Players and pay offs
 - d. Players and strategies
89. Strictly determined game means
- a. Minimax is known
 - b. Maximin is known
 - c. Maximin and minimax not equal
 - d. Maximin and minimax are equal
90. A two person zero sum game has a saddle point if
- a. A player has one strategy, that he plays all the time
 - b. A player can win or lose only with a value of zero
 - c. A player chooses the alternatives with equal probability
 - d. None of the above
91. A zero sum game refers to
- a. A game in which there are zero gain to each player
 - b. A game in which value of the game is zero
 - c. A game in which total gains of the games is zero
 - d. None of the above
92. A constant sum game is one in which
- a. The total gain is constantly changing
 - b. The total gain is indeterminate
 - c. The total gain is fixed
 - d. None of the above
93. In game theory the saddle point refers to
- a. The point of unstable equilibrium
 - b. The point where corner solution is located
 - c. The point where the minimax theorem is satisfied
 - d. None of the above
94. The pay off matrix in a game refers to
- a. The total pay-off in a game
 - b. The pay-off to one player in a game
 - c. The payments made by players in a co-operative game.
 - d. None of the above.
95. When a two person zero sum game has no saddle point, it can have
- a. A solution by minimax rule
 - b. A solution using mixed strategy
 - c. No solution at all
 - d. No solution by mixed strategy
96. The rule of dominance is used for
- a. To reduce the size of pay-off matrix
 - b. To enlarge the size of pay-off matrix
 - c. To make the size of pay-off table to zero
 - d. None of the above.

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97. In a dynamic Leontieff model
- Investment is explicitly model
 - Investment is clubbed along with consumption
 - Investment is not included
 - None of the above
98. Given the final demand vector C and the technological matrix, A , the gross output vector X could be estimated in the input-output model as
- $x = (A - \lambda I) C$
 - $x = (I - A) c$
 - $x = (A' A)^{-1} c$
 - $(I - A) x = c$
99. In a open Leontieff input-output model, the following parameters are given
- Wages and fuel demands
 - Output prices
 - Wages
 - Input prices
100. Input-output analysis is concerned with
- Cost
 - Production
 - demand
 - None of the above

ANSWER KEYS

1. d	21. a	41. a	61. a	81. a
2. a	22. b	42. c	62. b	82. c
3. c	23. a	43. a	63. c	83. b
4. b	24. b	44. b	64. a	84. a
5. b	25. a	45. a	65. b	85. c
6. a	26. d	46. b	66. c	86. a
7. c	27. b	47. c	67. b	87. c
8. a	28. c	48. a	68. b	88. a
9. c	29. c	49. b	69. b	89. d
10. a	30. a	50. c	70. a	90. a
11. c	31. c	51. c	71. a	91. b
12. b	32. c	52. a	72. d	92. c
13. b	33. b	53. c	73. c	93. c
14. b	34. a	54. b	74. b	94. c
15. a	35. c	55. c	75. c	95. b
16. c	36. c	56. b	76. a	96. a
17. d	37. b	57. a	77. a	97. b
18. b	38. b	58. c	78. a	98. d
19. d	39. a	59. b	79. c	99. a
20. c	40. c	60. c	80. c	100. b

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