UNIVERSITY OF CALICUT
SCHOOL OF DISTANCE EDUCATION
B.A. ECONOMICS (2011 Admission)
II SEMESTER
COMPLEMENTARY COURSE
MATHEMATICS FOR ECONOMIC ANALYSIS-I

QUESTION BANK

1. The objects constituting a set are called
   (a) estimates   (b) elements
   (c) set objects   (d) none of these

2. Who is regarded as the founder of theory of sets?
   (a) Adam Smith   (b) Karl Frederich Gauss
   (c) George Cantor   d) Euller

3. A collection of well-defined distinct objects thought of as a whole is called
   (a) union   (b) derivative
   (c) set   (d) integral

4. "No two elements of a set are identical". This statement is
   (a) Always true   (b) sometimes true
   (c) not true   (d) all of the above is possible

5. A set containing no element is called
   (a) null set   (b) empty set
   (c) void set   (d) all the above

6. A set containing only one element is termed as
   (a) unit set   (b) singleton set
   (c) both (a) and (b)   (d) none of these

7. A set of totality of elements from all possible sets is called
   (a) Union set   (b) Intersection set
   (c) Universal set   (d) Unit set

8. If two sets contain the same distinct elements, then they are called
   (a) equal sets   (b) unequal sets
   (c) equivalent sets   (d) all the above

9. If two sets contain same number of distinct elements but not the same elements are called
   (a) equal sets   (b) unequal sets
   (c) equivalent sets   (d) all the above

10. Sets and set operations can be represented by drawing diagrams termed as
    (a) Pie diagrams   (b) Venn diagrams
    (c) Histogram   (d) Ogives

11. If every element of a set B is also an element of A, then
    (a) A is a subset of B   (b) B is a subset of A
    (c) A is not a subset of B   (d) B is not a subset of A

12. In Venn diagram, the universal set is represented by
    (a) points within a rectangle   (b) points within a circle
    (c) Both (a) and (b)   (d) none of these

13. "Null set is a proper subset of all the non-null sets". This statement is
    (a) always true   (b) sometimes true
    (c) never true   (d) true subject to some conditions

14. The set which contains all the elements of the two given sets A and B, avoiding duplication, is called
    (a) intersection of A and B   (b) union of A and B
    (c) set of A and B   (d) none of these

15. Union of A with A, that is, A U A =
    (a) complement of A   (b) A itself
    (c) cannot be determined   (d) none of these

16. Union of A and the universal set is
    (a) A   (b) A'
    (c) universal set   (d) none of these

17. Union of A and a null set is equal to
    (a) intersection of A and null set   (b) null set
    (c) both (a) and (b)   (d) A

18. Union of A with B is same as union of B with A, that is, A U B = B U A is termed as
    (a) associative law of union   (b) cumulative law of union
    (c) reflective law   (d) all the above

19. The associative law of union is
    (a) A U (B U C) = (A U B) U C = A U B U C   (b) A U B = B U A
    (c) A U B = A U C   (d) B U C = B U A

20. If B is a subset of A, then A U B =
    (a) B   (b) A
    (c) intersection of A and B   (d) none of these

21. If a set C contain all the elements which are present in both the sets A and B, then set C is called
    (a) Union of A and B   (b) Intersection of A and B
    (c) Complement of A   (d) Complement of B

22. If two sets do not have any common element, then they are called
    (a) complement sets   (b) joint sets
    (c) disjoint sets   (d) none of these

23. A set containing all the elements of the universal set except those of set A is called
    (a) complement of set A   (b) complement of universal set
    (c) union of A and universal set   (d) universal set itself

24. The set of all elements belonging to A but not to B is
    (a) B − A   (b) A − B
    (c) A'   (d) B'

25. The set of all subsets of a set A is called
    (a) power set of A   (b) complement of A
    (c) Both (a) and (b)   (d) none of these

26. Any number raise to the power zero is always equal to
    (a) zero   (b) one
    (c) two   (d) that number itself

27. If $\dfrac{1}{a^n} = b$, then a =
    (a) $\left(\dfrac{1}{b}\right)^{\frac{1}{n}}$ (b) $\left(\dfrac{1}{b}\right)$
    (c) $b^{\frac{1}{n}}$ (d) n

28. The value of $(x^2 y^2 x^2 y^3)^{\frac{-1}{6}}$ is
    (a) 1/x   (b) 1/y
    (c) $\dfrac{1}{xy}$ (d) 1

29. The value of $(-4x^3)^2 \div (-2x^2)$ is
    (a) 32 x   (b) 32 x^7
    (c) 2 x   (d) none of these

30. The value of x that satisfies the equation $\frac{x}{4} = \frac{2x-1}{3}$ is
    (a) 4/5   (b) 4
    (c) 5/4   (d) 5

31. Solving the equation $\frac{x+20}{x}$ + 4 = 9 gives the value of x as
    (a) 4   (b) 5
    (c) 6   (d) 7

32. Unknown values in an equation are called
    (a) constants   (d) numeraire
    (c) variables   (d) all the above

33. Given or known values in an equations are called
    (a) constants   (d) parameters
    (c) coefficients   (d) all the above

34. In any equation (or function) involving two variables, such as y = 2x + 1, the variable that appears on the right-hand side of the equation is by convention called
    (a) dependent variable   (b) independent variable
    (c) endogenous variable   (d) explained variable

35. A variable which is free to take any value we choose to assign to it is called
    (a) dependent variable   (b) independent variable
    (c) endogenous variable   (d) explained variable

36. The variable that stands alone on the left-hand side of the equation such as y = 2x + 1 is known as
    (a) dependent variable   (b) independent variable
    (c) endogenous variable   (d) explained variable

37. The functions y = 2x + 1 and x = ½ y – ½ are said to be
    (a) non-linear functions   (b) inverse functions
    (c) step functions   (d) all the above

38. A function where a variable x can only vary in jumps, is often called
    (a) non-linear functions   (b) inverse functions
    (c) step functions   (d) all the above

39. The increase in dependent variable that results when the independent variable increases by one unit in a simple linear function is called

(a) y-intercept of the curve (b) slope of the curve

(c) x-intercept of the curve (d) marginal value

40. The value of the dependent variable where the graph cuts the y-axis is called
    (a) x-intercept (b) y-intercept
    (c) slope (d) none of these

41. The point at which the graph cuts the x-axis is called
    (a) x-intercept (b) y-intercept
    (c) slope (d) none of these

42. A linear function of the form 6x – 2y + 8= 0 is known as
    (a) explicit function (b) implicit function
    (c) quadratic function (d) all the above

43. If we are told that the two statements 'y = 3x' and 'y = x + 10' are both true at the same time, they are called
    (a) implicit functions (b) explicit functions
    (c) simultaneous equations (d) quadratic equations

44. Solving the simultaneous equations 8x + 4y = 12 and -2x + y = 9 gives
    (a) x = -3/2 and y = 6 (b) x = 4 and y = 2
    (c) x = ½ and y = ½ (d) none of these

45. Given the demand and supply functions q^D = -8p + 2000 and q^S =12p – 200 respectively, the equilibrium price is
    (a) p = 100 (b) p = 110
    (c) p = 120 (d) p = 140

46. The inverse demand function of the demand function q^D = -8p + 2000 is
    (a) p = -1/8 q^D + 250 (b) -8 q^D + 250
    (c) p = 2000 – 8p (d) none of these

47. Given the demand function q^D = -8p + 2000 and its inverse p = -1/8 q^D + 250, p in the inverse function which is interpreted as the maximum price that buyers are willing to pay for the
    (a) supply price (b) demand price
    (c) equilibrium price (d) reserved price

48. Given the supply function q^S = 12p – 200 and its inverse function p = 1/12 q^S + 50/3, p in the inverse function which is interpreted as the minimum price that sellers are willing to accept for the quantity q^S is called
    (a) supply price (b) demand price
    (c) equilibrium price (d) reserved price

49. The equilibrium price and quantity, given the inverse demand and supply functions
    p^D =-3q + 30 and p^S = 2q – 5
    (a) p = 9 and q = 7   (b)p = 10 and q = 7
    (c) p = 9 and q = 8   (d) p = 7 and q = 9

50. a x^2 + b x + c = 0 is
    (a) linear equation   (b) quadratic equation
    (c) polynomial of degree five   (d) none of these

51. Given any quadratic equation a x^2 + b x + c = 0, where a, b, and c are given constants, the solutions
    (roots) are given by the formula
    (a) x = $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (b) x = $\dfrac{-bc \pm \sqrt{b^2 - 4ac}}{2a}$

    (c) x = $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2ac}$ (d) none of these

52. The simplest case of a quadratic function is
    (a) y = x^2 (b) y = x^3
    (c) y = x^2 + b   (d) y = x^2 + bx+ c

53. A polynomial equation with degree two is called
    (a) linear equation   (b) quadratic equation
    (c) parabola equation   (d) all the above

54. The simplest form of rectangular hyperbola is
    (a) y = 1/x   (b) y = x^2
    (c) y = x^{-2} (d) y = x^3

55. A possible use in economics for the circle or the ellipse is to model
    (a) production possibility curve   (b) demand curve
    (c) isocost line   (d) supply curve

56. A consumer's income or budget is 120. She buys two goods, x and y, with prices 3 and 4
    respectively. Then the budget constraint can be expressed as
    (a) 4x + 3y = 120   (b) 3x + 4y = 120
    (c) 12x + 12y = 120   (d) cannot be determined

57. If a consumer's budget constraint is given as $P_x X + P_y Y = B$, then the absolute slope of the budget
    line is
    (a) B   (b) X/Y
    (c) P_x/P_y (d) none of these

58. A determinant composed of all the first-order partial derivatives of a system of equations,
    arranged in ordered sequence is called

(a) Hessian determinant   (b) Jacobian determinant

(c) discriminant   (d) first order determinant

59. If the value of the Jacobian determinant $|J| = 0$, the equations are
    (a) functionally dependent   (b) functionally independent
    (c) linearly independent   (d) none of these

60. If the value of the Jacobian determinant $|J| \neq 0$, the equations are
    (a) functionally dependent   (b) functionally independent
    (c) linearly dependent   (d) none of these

61. A Jacobian determinant is used to test
    (a) linear functional dependence between equations
    (b) non-linear functional dependence between equations
    (c) both linear and non-linear functional dependence between equations
    (d) none of these

62. A determinant composed of all the second-order partial derivatives, with the second-order direct partials on the principal diagonal and the second-order cross partials off the principal diagonal, and which is used to second order condition of optimization is called
    (a) Jacobian determinant   (b) Hessian determinant
    (c) discriminant   (d) none of these

63. A positive definite Hessian fulfills the second-order conditions for
    (a) maximum   (b) minimum
    (c) both maximum and minimum   (d) minimax

64. A negative definite Hessian fulfills the second order conditions for
    (a) maximum   (b) minimum
    (c) both maximum and minimum   (d) minimax

65. The determinant of a quadratic form is called
    (a) Jacobian determinant   (b) Hessian determinant
    (c) discriminant   (d) none of these

66. A mathematical statement setting two algebraic expressions equal to each other is called
    (a) equation   (b) hypothesis
    (c) inequality   (d) all the above

67. An equation in which all variables are raised to the first power is known as
    (a) linear equation   (b) non-linear equation
    (c) quadratic equation   (d) polynomial of degree two

68. The slope of a horizontal line is
    (a) one   (b) zero
    (c) two   (d) three

69. The slope of a vertical line is
    (a) one   (b) zero
    (c) two   (d) undefined

70. An iso-cost line represents
    (a) different combinations of two inputs that can be purchased with a given sum of money
    (b) different combinations of two goods that can be purchased with a given income
    (c) both (a) and (b)
    (d) none of these

71. (A+B)+C = A+(B+C). This law of matrices is known as
    (a) Cumulative law
    (b) Associative law
    (c) Distributive law
    (d) Identity law

72. (A+B) = (B+A). this law of matrices is known as
    (a) Cumulative law
    (b) Associative law
    (c) Distributive law
    (d) Identity law

73. k (A+B) = kA + kB. This law of matrices is known as
    (a) Cumulative law
    (b) Associative law
    (c) Distributive law
    (d) Identity law

74. If in a matrix, the number if rows is the same as the number of columns, it is called
    (a) Singular matrix
    (b) Non-singular matrix
    (c) Square matrix
    (d) Column vector

75. In a matrix, if there is only one row but any number of columns, it is called
    (a) Row matrix
    (b) Column matrix
    (c) Row vector
    (d) Both a & c

76. If all the elements of a matrix of any order are zero, it is called
    (a) Identity matrix
    (b) Null matrix
    (c) Zero matrix
    (d) Both b & c

77. A square matrix with 1's in its principal diagonal and zeros everywhere else is
    (a) Diagonal matrix
    (b) Identity matrix
    (c) Leading diagonal
    (d) Scalar matrix

78. If the columns of a given matrix A and B are changed into rows and vice-versa, the matrix thus obtained is called the
    (a) Symmetric matrix
    (b) Transpose of a matrix
    (c) Singular matrix
    (d) Rank of a matrix

79. A square matrix A, such that A = A', is called a
    (a) Symmetric matrix
    (b) Skew-symmetric matrix
    (c) Singular matrix
    (d) Rank of a matrix

80. If the determinant formed by the elements of the matrix A is equal to zero, then the matrix is
    (a) Skew symmetric
    (b) Symmetric
    (c) Singular
    (d) Non-singular

81. If the determinant formed by the elements of the matrix is not equal to zero, then the matrix is called
    (a) Skew symmetric
    (b) Symmetric
    (c) Singular
    (d) Non-singular

82. The matrix A multiplied by its inverse will be a
    (a) Identity matrix
    (b) Skew-symmetric matrix
    (c) Idempotent matrix
    (d) Adjoint of a matrix

83. A inverse is defined only if A is a
    (a) Square matrix
    (b) Column Vector
    (c) Orthogonal matrix
    (d) Skew-symmetric matrix

84. the sufficient condition required for the matrix to possess inverse is that the matrix should be
    (a) Square matrix
    (b) Singular matrix
    (c) Non-singular matrix
    (d) Orthogonal matrix

85. which method is used for finding inverse of a matrix
    (a) Gauss elimination method
    (b) Henrich Standard method
    (c) Co-factor method
    (d) Both a & c

86. A matrix with all elements zero other than all the diagonals is called
    (a) Diagonal matrix
    (b) Orthogonal matrix
    (c) Unit matrix
    (d) Column vector

87. Find the co-factor A_{23} of the matrix $A = \begin{bmatrix} 5 & -2 & 7 \\ 6 & 1 & -9 \\ 4 & -3 & 8 \end{bmatrix}$
    (a) 23
    (b) 7
    (c) -23
    (d) -7

88. Find the determinant of the matrix $A = \begin{bmatrix} 5 & -2 & 3 \\ 4 & -1 & -5 \\ 6 & 7 & 9 \end{bmatrix}$
    (a) 340
    (b) 100
    (c) 364
    (d) 76

89. A square matrix A of order 'n' is called a diagonal matrix if its non-diagonal elements are
    (a) Zero
    (b) Non-zero
    (c) One
    (d) None of the above

90. A diagonal matrix whose diagonal elements are equal is called
    (a) Unit matrix
    (b) Singular matrix
    (c) Scalar matrix
    (d) Non-singular matrix

91. A square matrix A of order mxn is called an upper triangular matrix if a_{ij} = o for all
    (a) $i > j$
    (b) $i < j$
    (c) $i = j$
    (d) all of the above

92. If A & B are symmetric matrices, then A + B is
    (a) Symmetric
    (b) Non-symmetric
    (c) Skew symmetric
    (d) Non-skew symmetric

93. For any square matrix A of order 'n', A +A^T is
      (a) Skew symmetric
      (b) Non-skew symmetric
      (c) Symmetric
      (d) Non-symmetric

94. For any square matrix A of order 'n', A - A^T is
      (a) Skew symmetric
      (b) Non-skew symmetric
      (c) Symmetric
      (d) Non-symmetric

95. If matrix A is a matrix of order nxm and B is another matrix of order mxn, then BA will be the matrix of order
      (a) nxm
      (b) mxn
      (c) nxn
      (d) mxm

96. If matrix A is comfortable for multiplication the (AB)^T is equal to
      (a) (BA)^T
      (b) B^{T}A^T
      (c) A^{T}B^T
      (d) A^T+BT

97. If A is a square matrix of order 'n' and I is the unit matrix of the same order, then AI is equal to
      (a) A
      (b) IA
      (c) I
      (d) Both (a) & (b)

98. If the ith raw and jth column of a square matrix of order 'n' are deleted, the determinant of the resulting square sub-matrix is called
      (a) Adjoint
      (b) Co-factor
      (c) Minor
      (d) Rank

99. The signed minor of the matrix A is called
      (a) Adjoint
      (b) Co-factor
      (c) Minor
      (d) Rank

100. The determinant of a matrix and that of its transpose are
      (a) Equal
      (b) Zero
      (c) One
      (d) Negatively related

101. If two rows or columns of a determinant A are identical, then the value of the determinant is

  (a) Equal
  (b) Zero
  (c) One
  (d) Negatively related

102. If every element of a raw or column of a square matrix A is zero, then the value of the determinant is
  (a) Equal
  (b) One
  (c) Zero
  (d) Not equal

103. If each element of a raw or column is a sum of two elements, the determinant can be expressed as the
  (a) sum of two determinants
  (b) difference of two determinants
  (c) multiplication of two determinants
  (d) division of two determinants

104. A square matrix A such that A2 = A is called
  (a) Orthogonal matrix
  (b) Skew symmetric matrix
  (c) Idempotent matrix
  (d) Singular matrix

105. If A& B are symmetric matrix, then AB – BA is
  (a) Symmetric
  (b) Skew symmetric matrix
  (c) Idempotent matrix
  (d) Orthogonal matrix

106. The transpose of the cofactor matrix is called
  (a) Adjoint of the matrix
  (b) Power of a matrix
  (c) Minor of the matrix
  (d) Rank of a matrix

107. For any square matrix A of order 'n', A(Adj A) is equal to
  (a) (Adj A)A
  (b) Determinant A
  (c) Rank of A
  (d) Both a & b

108. If A∏ B = ∅ , then A and B are called
  (a) Disjoint set
  (b) Complement set
  (c) Unit set
  (d) empty et

109. Matrix multiplication does not satisfy --------- law

(a) Associative
(b) Distributive
(c) Commutative
(d) None of the above

110. $Y = a_0 + a_1 X$ is a function
(a) Nonlinear
(b) Proportional
(c) polynomial
(d) linear

111. Relation between two numbers or variables are called
(a) Function
(b) Binary relation
(c) Inverse relation
(d) None of the above

112. If B is a subset of A , then A is a -------- of B
(a) Super set
(b) Sub set
(c) Empty set
(d) Universal set

113. the elements in the horizontal line in a matrix is called
(a) columns
(b) rows
(c) elements
(d) diagonal

114. If matrix A is of mxn dimension, then A^t will be --------- dimension
(a) nxm
(b) mxn
(c) nxp
(d) mxm

115. If $A = A^t$, then A is
(a) Symmetric matrix
(b) Skew symmetric matrix
(c) Identity matrix
(d) Orthogonal matrix

116. Given $S_1 = \{a,b,c\}$ $S_2 = \{a,1,2\}$, then $(S_1 - S_2) \sqcap (S_2 - S_1)$ is
(a) 1
(b) a
(c) b
(d) null set

117. The set of "stars in the sky" is an example of
(a) Countable set
(b) Infinite set
(c) Finite set
(d) Unit set

118. Ordered pairs of two sets are called
    (a) Elements
    (b) function
    (c) Cartesian product
    (d) None of the above

119. If IAI=0. then matrix A is called
    (a) Singular
    (b) Nonsingular
    (c) Identical
    (d) Proportional

120. AB=BA=I, then B is said to be -------- matrix of A
    (a) Adjoint
    (b) Inverse
    (c) Determinant
    (d) cofactor

121. Determinant of triangular matrix is the product of
    (a) Diagonal elements
    (b) Off-diagonal elements
    (c) Rows
    (d) columns

122. If IAI=24. then the determinant of its transpose is
    (a) 48
    (b) 0
    (c) 24
    (d) 42

123. AA^{-1}= ----- = $A^{-1}A$
    (a) I
    (b) A
    (c) A^2
    (d) 0

124. If the number of elements of the two sets are equal, then they are called
    (a) Equal set
    (b) Equivalent set
    (c) Order set
    (d) Subset

125. If a set has three elements, then its power set consist of ----- elements
    (a) 3
    (b) 5
    (c) 6
    (d) 8

126. The set of all elements which belong to set B but do not belong to set A is
    (a) AUB
    (b) A-B
    (c) B-A
    (d) AcB

127. Given A in 2x2 and B is 2x4, then the matrix AB will be of the order
    (a) 2x2
    (b) 2x4
    (c) 4x2
    (d) 1x2

128. If the matrix CxC =C, the matrix C is
    (a) Square matrix
    (b) Triangular matrix
    (c) Idempotent matrix
    (d) Identity matrix

129. Maximum number of linearly independent rows and columns of a matrix is called
    (a) Rank
    (b) Adjoint
    (c) Determinant
    (d) Inverse

130. Determinant of a 3X3 square matrix is called ----- determinant
    (a) First order
    (b) Second order
    (c) Third order
    (d) Fourth order

131. The set consisting of all the elements which belong to A as well as B is called
    (a) Union
    (b) Intersection
    (c) Complement
    (d) Partition

132. The total number of elements of the set of all possible outcome when two coins are tossed
    (a) 2
    (b) 3
    (c) 4
    (d) 6

133. If the relation is defined as from A to B, then relation from B to A
    (a) Relation
    (b) Inverse relation
    (c) Function
    (d) Binary

134. Special type of relation is
    (a) Function
    (b) Binary relation
    (c) Inverse
    (d) None of the above

135. Rectangular array of numbers, variables or parameters is called
    (a) Set
    (b) Exponents
    (c) Matrix
    (d) Function

136. When the demand for a good is given by Q=50-P, the maximum amount that would be demanded at nil price
    (a) 1
    (b) 0
    (c) 40
    (d) 50

137. When A = {0}, the set A is
    (a) Null
    (b) Equal
    (c) Singleton
    (d) All of the above

138. Given A={a,b,c} and B={a,d,c}, then AUB will be
    (a) a,b,c
    (b) a,d,c
    (c) c,d,a
    (d) a,b,c,d

139. in a square matrix, the elements lie from left top to right bottom is
    (a) diagonal elements
    (b) row elements
    (c) column elements
    (d) triangular elements

140. if all the elements below the leading diagonal are zero in a square matrix, it is
    (a) lower triangular matrix
    (b) identity matrix
    (c) inverse matrix
    (d) upper triangular matrix

141. conformity condition for matrix addition is that matrices should be
    (a) square
    (b) same order
    (c) equal
    (d) proportional

142. commutative law of matrix subtraction is
    (a) A+B=B+A
    (b) A-B=B-A
    (c) A-B= -B+A
    (d) A+B=A-B

143. In matrix algebra (AB)C=A(BC) is
    (a) Associative
    (b) Commutative
    (c) Distributive
    (d) None of the above

144. In matrix expression of linear equation, AX=B, X denotes
    (a) Coefficient matrix
    (b) Constants
    (c) Identity matrix
    (d) Solution vector

145. If in a matrix any two rows or columns are identical or proportional or linearly dependent, the determinant will be
    (a) Equal
    (b) Zero
    (c) Unity
    (d) Infinity

146. Given the demand curve, P=20-0.2Q, the revenue curve will be
    (a) 20-0.2Q
    (b) 10-.1Q
    (c) 20Q-0.2Q
    (d) $20Q-0.2Q^2$

147. If the demand curve is linear and negatively sloped, the marginal revenue curve has a slope
    (a) Negative
    (b) Positive
    (c) Infinite
    (d) None of the above

148. The slope of isocost line is the ratio of
    (a) Quantities
    (b) Input prices
    (c) Costs
    (d) Product prices

149. The line of linear equation should begin from
    (a) The origin
    (b) X axis
    (c) Y axis
    (d) Any of the above

150. For a matrix minor of element M_{33} =25, the cofactor is
    (a) -25
    (b) 25
    (c) 0
    (d) 33

ANSWER KEY

1. (b) elements

2. (c) George Cantor

3. (c) set

4. (a) always true

5. (d) all the above

6. (c) both (a) and (b)

7. (c) universal set

8. (a) equal sets

9. (c) equivalent sets

10. (b) Venn diagrams

11. (b) B is a subset of A

12. (a) points within a rectangle

13. (a) always true

14. (b) union of A and B

15. (b) A

16. (c) universal set

17. (d) A

18. (b) cumulative law of union

19. (a) A U (B U C) = (A U B) U C = A U B U C

20. (b) A

21. (b) intersection of A and B

22. (c) disjoint sets

23. (a) complement of set A

24. (b) A – B

25. (a) power set of A

26. (b) one

27. (a) $\left(\frac{1}{b}\right)^{\frac{1}{n}}$

28. (c) $\frac{1}{xy}$

29. (b) $32\,x^{7}$

30. (a)4/5

31. (b) 5

32. (c) variable

33. (d) all the above

34. (b) independent variable

35. (b) independent variable

36. (a) dependent variable

37. (b) inverse functions

38. (c) step function

39. (b) slope of the curve

40. (b) y-intercept of the graph

41. (a) x-intercept

42. (b) implicit function

43. (c) simultaneous equations

44. (a) x = -3/2 and y = 6

45. (b) P = 110

46. (a) p = -1/8 q^{D} + 250

47. (b) demand price

48. (a) supply price

49. (a) P = 9 and q =7

50. (b) quadratic equation

51. (a) x = $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

52. (a) y = x^2

53. (b) quadratic equation

54. (a) y = 1/x

55. (a) production possibility curve

56. (b) 3x + 4y = 120

57. (c) P_x/P_y

58. (b) Jacobian determinant

59. (a) functionally dependent

60. (b) functionally independent

61. (c) Both linear and non-linear functional dependence between equations

62. (b) Hessian determinant

63. (b) minimum

64. (a) maximum

65. (c) discriminant

66. (a) equation

67. (a) linear equation

68. (b) zero

69. (d) undefined

70. (a) different combinations of two inputs that can be purchased with a given sum of money

71. (b) Associative law

72. (a) Cumulative law

73. (c) Distributive law

74. (c) Square matrix

75. (d) Both a & c

76. (d) Both b & c

77. (b) Identity matrix

78. (b) Transpose of a matrix

79. (a) Symmetric matrix

80. (c) Singular

81. (d) Non-singular

82. (a) Identity matrix

83. (a) Square matrix

84. (c) Non-singular matrix

85. (d) Both a & c

86. (a) Diagonal matrix

87. (d) 7

88. (c) 364

89. (b) Non-zero

90. (c) Scalar matrix

91. (a) i > j

92. (a) Symmetric

93. (c) Symmetric

94. (a) Skew symmetric

95. (d) maximum

96. (b) B^{T}A^T

97. (d) Both a & b

98. (c) Minor

99. (b) Co-factor

100. (a) Equal

101. (b) Zero
102. (c) Zero
103. (a) sum of two determinants
104. (c) Idempotent matrix
105. (b) Skew symmetric matrix
106. (a) adjoint of a matrix
107. (d)both a&b
108. (a)Disjoint set
109. (c)Commutative
110. (d)linear
111. (b)Binary relation
112. (a)Super set
113. (b)rows
114. (a)nxm
115. (a)Symmetrical set
116. (d)Null set
117. (b)infinite set
118. (c)Cartesian product
119. (a)Singular
120. (b)Inverse
121. (a)Diagonal elements
122. (c)24
123. (a)I
124. (b)Equivalent set
125. (d)8
126. (c)B-A
127. (b)2x4
128. (d)Identity matrix

129. (a)Rank
130. (c)Third order
131. (b)Intersection
132. (c)4
133. (b)Inverse relation
134. (a)Function
135. (c)Matrix
136. (d)50
137. (c)Singleton
138. (d)a,b,c,d
139. (a)Diagonal elements
140. (b)Identity Matrix
141. (b)Same order
142. (c)A-B= -B+A
143. (a)Associative
144. (d)Solution Vector
145. (b)Zero
146. (d)$20Q-0.2Q^2$
147. (a)Negative
148. (b)Input prices
149. (d)Any of the above
150. (b)25