Question

1. Operations Research approach is ____________ approach
   A. multi-disciplinary
   B. scientific
   C. intuitive
   D. collect essential data

2. ____________ is a mathematical technique used to solve the problem of
   allocating limited resource among the competing activities
   A. Linear Programming problem
   B. Assignment Problem
   C. Replacement Problem
   D. Non linear Programming Problem

3. In an Linear Programming Problem functions to be maximized or minimized are called ____________
   A. constraints
   B. objective function
   C. basic solution
   D. feasible solution

4. Operations research is the application of ____________ methods to arrive at the optimal Solutions to the
   A. economical
   B. scientific
   C. a and b both
   D. artistic

5. Which technique is used in finding a solution for optimizing a given objective, such as
   profit maximization or cost reduction under certain constraints?
   A. Quailing Theory
   B. Waiting Line
   C. Both A and B
   D. Linear Programming

6. OT techniques help the directing authority in optimum allocation of various limited resources like_____
   A. Men and Machine
   B. Money
   C. Material and Time
   D. All of the above
7. The assignment algorithm was developed by ____________ method.
   A. HUNGARIAN
   B. VOGELS
   C. MODI
   D. TRAVELING SALES MAN

8. An assignment problem is a particular case of ____________.
   A. transportation Problem
   B. assignment Problem
   C. travelling salesman problem
   D. replacement Problem

9. The coefficient of slack\surplus variables in the objective function are always assumed to be ____________.
   A. 0
   B. 1
   C. M
   D. -M

10. The Operations research technique which helps in minimizing total waiting and service costs is _____
    A. Queuing Theory
    B. Decision Theory
    C. Both A and B
    D. None of the above

11. Graphical optimal value for Z can be obtained from ____________.
    A. Corner points of feasible region
    B. Both a and c
    C. corner points of the solution region
    D. none of the above

12. In LPP the condition to be satisfied is ____________
    A. Constraints have to be linear
    B. Objective function has to be linear
    C. none of the above
    D. both a and b

13. When the sum of gains of one player is equal to the sum of losses to another player in a game, this situation is known as ____________.
    A. two-person game
    B. two-person zero-sum game
    C. zero-sum game
    D. non-zero-sum game

14. In the network, one activity may connect any ____________ nodes
    A. 1
    B. 2
15. Graphical method is also known as ______________.
   A. Simplex Method
   B. Dual Simplex Method
   C. Big-M Method
   D. Search-Approach Method

16. In game theory, the outcome or consequence of a strategy is referred to as the ______________.
   A. payoff.
   B. penalty.
   C. reward.
   D. end-game strategy.

17. In Linear programming problem of maximization, the objective is to maximise ______________.
   A. Profit
   B. optimization
   C. cost
   D. None of the above

18. __________ or __________ are used to "balance" an assignment or transportation problem.
   A. Destinations; sources
   B. Units supplied; units demanded
   C. Dummy rows; dummy columns
   D. Large cost coefficients; small cost coefficients

19. The method of finding an initial solution based upon opportunity costs is called __________.
   A. the northwest corner rule
   B. Vogel’s approximation
   C. Least Cost method
   D. None of above

20. ______ occurs when the number of occupied squares is less than the number of rows
   A. Degeneracy
   B. Infeasibility
   C. Unboundedness
   D. Unbalance

21. In a transportation table, an ordered set of ____________ or more cells is said to form a loop
   A. 2
   B. 3
   C. 4
   D. 5

22. A Linear Programming Problem have ______________ optimal solution
A. 1
B. 2
C. more than 1
D. more than 2

23. In a network diagram an event is denoted by the symbol ______________.
   A. arrow
   B. straight line
   C. curve
   D. circle

24. An ______________ represent the start or completion of some activity and as such it consumes no time
   A. activity
   B. event
   C. slack
   D. path

25. Optimization Techniques approach is typically based on the use of ______________.
   A. physical model.
   B. mathematical model.
   C. iconic model.
   D. descriptive model.

26. A activity in a network diagram is said to be ______________ if the delay in its start
    will further delay the project completion time.
   A. forward pass
   B. backward pass
   C. critical.
   D. non-critical.

27. The region common to all the constraints including the non-negativity restrictions is called the ______
   A. Feasible space
   B. unique solution
   C. optimum solution
   D. infeasible solution

28. A feasible solution of an Linear Programming Problem that optimizes the
    objective function is called ______________
   A. basic feasible solution
   B. optimum solution
   C. feasible solution
   D. solution

29. Charnes method of penalty is called ______________
   A. Simplex Method
   B. Dual Simplex Method
   C. Big-M Method
30. In the transportation table, empty cells will be called ______________.
   A. occupied
   B. unoccupied
   C. no
   D. finite

31. The process that performs the services to the customer is known as ______________.
   A. queue
   B. service channel
   C. customers
   D. server

32. Slack is also known as ______________.
   A. float
   B. event
   C. activity
   D. path

33. Graphical method of linear programming is useful when the number of decision variable are ____________.
   A. 1
   B. 2
   C. 3
   D. 4

34. In an assignment problem involving 5 workers and 5 jobs, total number of assignments possible are ____________.
   A. 5
   B. 10
   C. 15
   D. 20

35. The cost of a surplus variable is ______________.
   A. 0
   B. 1
   C. 2
   D. -1

36. The dual of the dual is ______________.
   A. dual-primal
   B. primal-dual
   C. dual
   D. primal

37. When the total demand is not equal to supply then it is said to be ______________.
   A. balanced
   B. unbalanced
38. An activity is represented by a/an ______________.
   A. arrow
   B. straight line
   C. curve
   D. arc

39. A project consists of a number of tasks which are called ______________.
   A. activities
   B. floats
   C. events
   D. paths

40. The area bounded by all the given constraints is called ______________.
   A. feasible region
   B. basic solution
   C. non feasible region
   D. optimum basic feasible solution

41. In game theory, the outcome or consequence of a strategy is referred to as the
   A. payoff.
   B. penalty.
   C. reward.
   D. end-game strategy.

42. The Operations research technique which helps in minimizing total waiting and service costs is ______
   A. Queuing Theory
   B. Decision Theory
   C. Both A and B
   D. None of the above

43. Which of the following is a method for improving an initial solution in a transportation problem?
   A. northwest-corner
   B. intuitive lowest-cost
   C. southeast-corner rule
   D. stepping-stone

44. Service mechanism in a queuing system is characterized by ______________.
   A. customers behavior
   B. servers behavior
   C. customers in the system
   D. server in the system

45. The objective of network analysis is to ______________.
   A. minimize total project duration
B. minimize total project cost
C. minimize production delays, interruption and conflicts
D. maximize total project duration

46. The customers of high priority are given service over the low priority customers is ____________.
   A. Pre-emptive
   B. FIFO
   C. LIFO
   D. SIRO

47. A queuing system is said to be a ____________ when its operating characteristic are independent upon time
   A. pure birth model
   B. pure death model
   C. transient state
   D. steady state

48. An activity which does not consume neither any resource nor time is known as ____________.
   A. predecessor activity
   B. successor activity
   C. dummy activity
   D. activity

49. Priority queue discipline may be classified as ____________.
   A. pre-emptive or non-pre-emptive
   B. limited
   C. unlimited
   D. finite

50. In the basic EOQ model, if the lead time increases from 2 to 4 days, the EOQ will ____________
   A. double increase
   B. remain constant
   C. but not double
   D. decrease by a factor of two

51. The model in which only arrivals are counted and no departure takes place are called ____________.
   A. pure birth model
   B. pure death model
   C. birth death model
   D. death birth model

52. Economic order quantity results in ____________
   A. equalisation of carrying cost and procurement cost
   B. favourable procurement price
   C. reduced chances of stock outs
   D. minimization of set up cost
53. The average arrival rate in a single server queuing system is 10 customers per hour 
and average service rate is 15 customers per hour. The average time that 
a customer must wait before it is taken up for service shall be ______________ minutes. 
A. 6 
B. 8 
C. 10 
D. 12 

54. The time between the placement of an order and its delivery is called as ____________
A. buffer time 
B. lead time 
C. Economic Order Quantity 
D. capital time 

55. All of the following may be used to find the EOQ except _____________.
A. optimal number of days supply to order 
B. number of orders which minimize ordering costs optimal 
C. number of rupees per order optimal 
D. number of orders per year 

56. All of the following are assumptions of the EOQ model except _____________.
A. the usage rate is reasonably constant 
B. replenishment is not instantaneous 
C. only one product is involved 
D. there are no quantity discount price 

57. When D=18000, holding cost=Rs.1.20, set-up cost=Rs.400, EOQ = _____________.
A. 3465 
B. 3750 
C. 3500 
D. 4000 

58. A solution can be extracted from a model either by
A. Conducting experiments on it 
B. Mathematical analysis 
C. Both A and B 
D. Diversified Technique 

59. The solution to a transportation problem with m-sources and 
n-destinations is feasible if the numbers of allocations are _____________.
A. m+n 
B. mn 
C. m-n 
D. m+n-1 

60. The allocation cells in the transportation table will be called _____________. cell
61. To resolve degeneracy at the initial solution, a very small quantity is allocated in ______________ cell
   A. occupied
   B. unoccupied
   C. no
   D. finite

62. The assignment problem is always a ______________ matrix.
   A. circle
   B. square
   C. rectangle
   D. triangle

63. The right hand side constant of a constraint in a primal problem appears in the corresponding dual as ______________.
   A. a coefficient in the objective function
   B. a right hand side constant of a function
   C. an input-output coefficient a left hand side constraint
   D. coefficient variable

64. The transportation problem deals with the transportation of ______________.
   A. a single product from a source to several destinations
   B. a single product from several sources to several destinations
   C. a single product from several sources to a destination
   D. a multi-product from several sources to several destinations

65. When the total demand is equal to supply then the transportation problem is said to be ______________.
   A. balanced
   B. unbalanced
   C. maximization
   D. minimization

66. Linear Programming Problem is a technique of finding the ______________.
   A. optimal value
   B. approximate value
   C. initial value
   D. infeasible value

67. The cost of a slack variable is ______________.
   A. 0
   B. 1
   C. 2
68. Which of the following is a method for improving an initial solution in a transportation problem?
   A. northwest-corner
   B. intuitive lowest-cost
   C. southeast-corner rule
   D. stepping-stone

69. Linear Programming Problem that can be solved by graphical method has ______________.
   A. linear constraints
   B. quadratic constraints
   C. non linear constraints
   D. bi-quadratic constraints

70. ____________ method is an alternative method of solving a Linear Programming Problem involving artificial variables
   A. Simplex Method
   B. Big-M Method
   C. Dual Simplex Method
   D. Graphical Method

71. The purpose of a dummy source or dummy destination in a transportation problem is to
   A. prevent the solution from becoming degenerate.
   B. obtain a balance between total supply and total demand.
   C. make certain that the total cost does not exceed some specified figure.
   D. provide a means of representing a dummy problem.

72. Which of the following is NOT needed to use the transportation model?
   A. the cost of shipping one unit from each origin to each destination
   B. the destination points and the demand per period at each
   C. the origin points and the capacity or supply per period at each
   D. degeneracy

73. When total supply is equal to total demand in a transportation problem, the problem is said to be
   A. Balanced
   B. Unbalanced
   C. Degenerate
   D. None of the above

74. One disadvantage of using North-West Corner Rule to find initial solution to the transportation problem is that
   A. it is complicated to use
   B. it does not take into account cost of transportation
   C. it leads to degenerate initial solution
75. In marking assignments, which of the following should be preferred?
A. Only row having single zero
B. Only column having single zero
C. Only row/column having single zero
D. Column having more than one zero

76. While solving a linear programming problem infeasibility may be removed by ______________.
A. adding another constraint
B. adding another variable
C. removing a constraint
D. removing a variable

77. Maximization assignment problem is transformed into a minimization problem by ______________.
A. adding each entry in a column from the maximum value in that column
B. subtracting each entry in a column from the maximum value in that column
C. subtracting each entry in the table from the maximum value in that table
D. adding each entry in the table from the maximum value in that table

78. In a transportation table, an ordered set of ______________ or more cells is said to form a loop
A. 2
B. 3
C. 4
D. 5

79. If the given Linear Programming Problem is in its canonical form then primal-dual pair is ______________.
A. symmetric
B. un symmetric
C. square
D. non square

80. If all aij values in the entering variable column of the simplex table are negative, then ______________.
A. solution is unbounded
B. solution is degenerate
C. there exist no solution
D. there are multiple solutions

81. By constructing models, the problems in libraries increase and cannot be solved.
A. True
B. False

82. In O.T., the ______________ are prepared for situations.
A. mathematical models  
B. physical models diagrammatic  
C. diagrammatic models  
D. all of above

83. The method of finding an initial solution based upon opportunity costs is called __________.
A. the northwest corner rule  
B. Vogel's approximation  
C. Johanson's theorem  
D. Flood's technique

84. The purpose of a dummy source or dummy destination in a transportation problem is to
A. prevent the solution from becoming degenerate.  
B. obtain a balance between total supply and total demand.  
C. make certain that the total cost does not exceed some specified figure.  
D. provide a means of representing a dummy problem.

85. What is the objective function in linear programming problems?
A. A constraint for available resource  
B. An objective for research and development of a company  
C. A linear function in an optimization problem  
D. A set of non-negativity conditions

86. Which of the following is not the phase of OR methodology?
A. Formulating a problem  
B. Constructing a model  
C. Establishing controls  
D. Controlling the environment

87. Every LPP is associated with another LPP is called __________
A. Primal  
B. Dual  
C. NLPP  
D. None of above

88. Key concept under which technique are network of events and activities, resource allocation, time and cost considerations, network paths and critical paths?
A. Game Theory  
B. Network Analysis  
C. Decision Theory  
D. None of the above

89. The mathematical model of an LP problem is important because.
A. It helps in converting the verbal description & numerical data into mathematical expression
B. Decision-makers prefer to work with formal models
C. It captures the relevant relationship among decision factors
D. It enables the use of algebraic technique

90. Which of the following characteristics apply to queuing system?
   A. Customer population
   B. Arrival process
   C. Both a & b
   D. Neither a nor b