Question Paper

 In operations research, the
2. Which of the following is not the phase of OR methodology?A. Formulating a problemB. Constructing a modelC. Establishing controlsD. Controlling the environment
3. Operations research is the application of
 4. Which technique is used in finding a solution for optimizing a given objective, such as profit maximization or cost reduction under certain constraints? A. Queuing Theory B. Waiting Line C. Both (A) and (B) D. Linear Programming
5. The operations research technique which helps in minimizing total waiting and service costs is
 6. In graphical representation the bounded region is known as region A. solution B. basic solution C. feasible solution D. optimal

7. Maximize Z = 11x + 8y subject to 4,6,6,0,0.xyx yxyð£ ð£ ð+ ð£ ð³ ð³ A. 44 at (4, 2) B. 60 at (4, 2) C. 62 at (4, 0) D. 48 at (4, 2)
8. The total time required to complete all the jobs in a job sequencing problem is known as A. processing time B. waiting time C. elapsed time D. idle time
 9. The minimum number of line covering all zeros in a reduced cost matrix of order n can be A. At least n B. At most n C. n - 1 D. n + 1
10. The unused materials are returned to stores with a material andnote.A. AcceptanceB. TransferC. ReturnD. None of the above
11. The optimum level of inventory is popularly referred to as the
12. Which of the following is not an inventory?A. MachinesB. Raw MaterialC. Finished ProductsD. Consumable tools
13. The replacement policy that is imposed on an item irrespective of its failure is

B. Individual replacementC. Repair spare replacementD. Successive replacement
 14. The right-hand side constant of a constraint in a primal problem appears in the corresponding dual as A. coefficient in the objective function B. a right-hand side constant of a function C. an input output coefficient D. a left-hand side constraint coefficient variable
 15. In a transportation problem, the method which finds difference between two least cost for each row and column is
16. In simplex method, we add in the case of constraints with sign "=". A. Surplus variable B. Artificial variable C. Slack variable D. None of the above
 17. If an opportunity cost value is used for an unused cell to test optimality, it should be A. Equal to zero B. Most negative number C. Most positive number D. Any value
18 is that element of the simplex table which is both in the key row and key column. A. Key element B. Pivot element C. Both (A) and (B) D. None of the above
19. Matrix Minima Method to find initial feasible solution to a TP is also called

C. VAM D. None of the above
20. Traffic intensity in Queuing Theory is also called
21. A customer s behaviour of leaving the queue due to impatience is called
22. Commonly assumed probability distribution of service pattern are
23. In sequencing if the smallest time belong to machine-1, then that job has to be placed of the sequence. A. in the middle B. in the starting C. at end D. None of the above
24. Replacement is said to be necessary if
25. In the formula of Economic Order Quantity, the alphabet "O stands for

26. What is the first approach in optimization methods? A. Theory of bending B. Theory of layout C. Theory of elongation D. Theory of stress
27. Initial feasible solution to a transportation problem can be found out by
28. The coefficient of an artificial variable in the objective function of penalty method are always assumed to be
29. 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
30. In the optimal simplex table, $Z j - C j = 0$ value indicates
31. When D = 18000, holding cost = ` 1.20, set-up cost = ` 400, EOQ =
32. The unit of traffic intensity is

B. Markow C. Erlang D. Kendall
33. The method used to solve LPP with use of artificial variables is called
34. Which of the followings is an assumption of Linear Programming Technique ? A. Divisibility B. Additivity C. Proportionality D. All of the above
35. The occurrence of degeneracy while solving a transportation problem means that
36. Column in simplex initial table used to represent new basic variable is classified as
37. In simplex method, slack, surplus and artificial variables are restricted to be
38. In simplex method basic solution set as $(n - m)$, all variables other than basic are classified as

C. basic variables D. non-basic variable
39. In simplex method, we add variables in the case of "= A. Slack Variable B. Surplus Variable C. Artificial Variable D. None of the above
40 is another method to solve a given LPP involving some artificial variable. A. MODI method B. Method of penalties C. Two-phase simplex method D. None of the above
41. In transportation models designed in linear programming, points of demand is classified as
42. In less than or equal to constraint equations, variable which is used to balance both side of equations is classified as
43. If in a LPP, the solution of a variable can be made infinity large without violating the constraints, the solution is
44. A BFS of a LPP is said to be if at least one of the basic variable is zero. A. Degenerate B. Non-degenerate C. Infeasible

D. Unbounded 45. Which of the following is a type of Linear Programming Problem? A. Manufacturing problem B. Diet problem C. Transportation problems D. All of the above 46. Cells in the transportation problem having positive allocation will be called A. cells B. occupied C. unoccupied D. table 47. are expressed is the form of inequities or equations. A. Constraints **B.** Objective Functions C. Both (A) and (B) D. None of the above 48. The objective, functions and constraints are linear relationship between A. Variables B. Constraints C. Functions D. All of the above 49. Graphic method can be applied to solve a LPP when there are only variable. A. One B. More than one C. Two D. Three 50. In LPP, degeneracy occurs in stages. A. One

51. If there are more than one optimum solution for the decision variable the

B. Two C. Three D. Four

solution is
52. The word "Linear" means that the relationships are represented by
53. Any feasible solution which optimizes (minimizes or maximizes) the objective function of the LPP is called its
54. A set of values X I , X 2 ,, X n which satisfies the constraints of the LPP is called
55. An objective function is maximized when it is a function. A. Passive B. Profit C. Cost D. None of the above
56. PP is exactly used in solving what kind of resource allocation problems? A. Production planning and scheduling B. Transportation C. Sales and advertising D. All of the above
57 which is a subclass of a Linear Programming Problem (LPP). A. Programming problem B. Transportation problem C. Computer problem

D. Both (A) and (B)
58. MODI method is used to obtain
59. For solving an assignment problem, which method is used ? A. Hungarian B. American C. German D. Both (A) and (B)
60. To make an unbalanced assignment problem balanced, what are added with all entries as zeroes ? A. Dummy rows B. Dummy columns C. Both (A) and (B) D. Dummy entries
61. Any feasible solution to a transportation problem containing m origins and n destinations is said to be
62. A path formed by allowing horizontal and vertical lines and the entire corner cells of which are occupied is called a
63. Once the initial basic feasible solution has been computed, what is the next step in the problem ? A. VAM B. Modified distribution method C. Optimality test D. None of the above

64. The variables whose coefficient vectors are unit vectors are called	
65. The variable is used for the greater than or equal to ð(ð) ð³ type of constraint. A. Only Slack B. Surplus and Artificial C. Only Artificial D. Basic	
66. The time period between placing an order its receipt in stock is known as	