Paper Code : 3846

MCA Sem – III
JUL/SEP – 2021
C B O M

કુલ સમય : ૬૦ મીનીટ | કુલ પ્રશ્નો : ૫૦ | વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫

નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

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1 The term "Operation Research" was coined by :
A. McClosky and Trefthen B. Arthur Clark C. Churchman, Ackoff and Arnoff D. George B Dantzig

2 In India, first Operations Research unit was set up at .....
A. Regional Research Laboratory, Hyderabad
B. Indian Statistical Institute, Kolkotha
C. Indian Institute of Science and Technology, Bengaluru
D. Indian Institute of Science and Technology, Mohali

3 Who defined Operations Research as "the art of giving bad answers to problems which otherwise have worse answers"?
A. H M Wagner B. H A Taha C. T L Saaty D. Arthur Clark

4 Operations Research is a very powerful tool for .....
A. Operations B. Research C. Decision making D. None of these

5 The innovative science of Operations Research was discovered during .....
A. Civil war B. World war I C. World war II D. Industrial Revolution

6 Operations Research cannot give perfect ..... to the problem.
A. Answers B. Solutions C. Both a and b D. Decisions

7 ..... models involve more risks and uncertainties.
A. Probabilistic B. Deterministic C. Both a and b D. None of these

8 .....are representations of reality.
A. Phases B. Models C. Both a and b D. None of these

9 Dual of the dual s a .....
A. Dual B. Primal C. Alternative D. None of these

10 The quantitative approach to decision analysis is a .....
A. Logical approach B. Rational approach C. Scientific approach D. All of the above

11 The dummy source/destination in a transportation problem is added to .....
A. Satisfy rim constraints B. Prevent solution from becoming degenerate
C. Ensure total cost does not exceed a limit D. None of the above

12 The solution to a transportation problem with 'm' rows and 'n' columns is feasible if thenumber of positive allocations are:
A. m + n B. m x n C. m +n – 1 D. m +n + 1

13 The method used for solving an assignment problem is:
A. Reduced matrix method B. MODI method C. Hungarian method D. None of these

14 All the parameters in the linear programming model are assumed to be .....
A. Variables B. Constraints C. Functions D. None of these

15 In simplex method, we add ..... in the case of constraints with sign "="
A. Surplus variable B. Artificial variable C. Slack variable D. None of these

16 When at least one of the basic variables is zero, then the basic feasible solution to a Linear Programming Problem is said to be .....
A. Infeasible B. Unbounded C. Degenerate D. Non-degenerate

17 In a maximisation assignment problem, the objective is to maximise.....
A. Profit B. Cost C. Optimisation D. None of these

18 The graphical method if LPP uses:
A. Linear equations B. Constraint equations C. Objective function D. All of the above

19 While solving a LPP graphically, the area bounded by constraints is called .....
A. Feasible region B. Infeasible region C. Unbounded region D. None of these

20 An optimal solution is considered as the ..... among the feasible solutions.
A. Worst B. Best C. Ineffective D. None of these

21 The allocated cells in the transportation table are called .....
A. Occupied cells B. Empty cells C. Unoccupied cells D. None of these

22 Initial feasible solution to a transportation Problem can be found out by .....

A. VAM B. MODI Method C. Both a and b D. None of these

23 Operations Research techniques help to find ..... solution.
A. Feasible solution B. Infeasible solution C. Optimal solution D. None of these

24 PERT stand for:
A. Performance Evaluation Review Technique B. Programme Evaluation Review Technique
C. Programme Evaluation Research Technique D. None of these

25 In network diagram, events are commonly represented by .....
A. Arrows B. Nodes C. Triangles D. None of these

26 Operations research is the application of _____methods to arrive at the optimal Solutions to the problems.
A. economical B. scientific C. a and b both D. artistic

27 OR can evaluate only the effects of ----------.
A. Personnel factors. B. Financial factors C. Numeric and quantifiable factors. D. Environmental Factor

28 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

29 OR has a characteristics that it is done by a team of
A. Scientists B. Mathematicians C. Academics D. All of the above

30 Hungarian Method is used to solve
A. A transportation problem B. A travelling salesman problem C. A LP problem D. Both a & b

31 What enables us to determine the earliest and latest times for each of the events and activities and thereby helps in the identification of the critical path?
A. Programme Evaluation B. Review Technique (PERT) C. Both A and B D. Deployment of resources

32 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

33 Minimize Z = _____
A. –maximize(Z) B. -maximize(-Z) C. maximize(-Z) D. none of the above

34 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

35 Degeneracy occurs when
A. Basic variables are positive but some of non-basic variables have negative values
B. The basic matrix is singular, it has no inverse
C. Some of basic variables have zero values
D. Some of non-basic variables have zero values

36 For a maximization problem, objective function coefficient for an artificial variable is
A. + M B. -M C. Zero D. None of these

37 An optimal assignment requires that the maximum number of lines that can be drawn through squares with zero opportunity cost be equal to the number of
A. Rows or columns B. Rows & columns C. Rows + columns –1 d. D. None of the above

38 The purpose of a dummy row or column in an assignment problem is to
A. Obtain balance between total activities &total resources
B. Prevent a solution from becoming degenerate
C. Provide a means of representing a dummy problem
D. None of the above

39 Maximization assignment problem is transformed into a minimization problem by
A. Adding each entry in a column from the maximization 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. Any one of the above

40 An optimal solution of an assignment problem can be obtained only if
A. Each row & column has only one zero element
B. Each row & column has at least one zero element
C. The data is arrangement in a square matrix
D. None of the above

41 In applying Vogel's approximation method to a profit maximization problem, row andcolumn penalties are determined by:
A. finding the largest unit cost in each row or column.
B. finding the smallest unit cost in each row or column.
C. finding the sum of the unit costs in each row or column.
D. finding the difference between the two lowest unit costs in each row and column.

42 An assignment problem can be viewed as a special case of transportation problem in which the capacity from each source is _____ and the demand at each destination is_____.
A. 1; 1 B. Infinity; infinity C. 0; 0 D. 1000; 1000

43 The initial solution of a transportation problem can be obtained by applying any known method. However, the only condition is that
A. The solution be optimal B. The rim conditions are satisfied
C. The solution not be degenerate D. All of the above

44 The solution to a transportation problem with 'm' rows (supplies) & 'n' columns (destination) is feasible if number of positive allocations are
A. m+n B. m*n C. m+n-1 D. m+n+1

45 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

46 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 a degenerate initial solution D. All of the above

47 During an iteration while moving from one solution to the next, degeneracy may occur when
A. The closed path indicates a diagonal move
B. Two or more occupied cells are on the closed path but neither of them represents acorner of the path.
C. Two or more occupied cells on the closed path with minus sign are tied for lowest circled value
D. Either of the above

48 The occurrence of degeneracy while solving a transportation problem means that
A. total supply equals total demand
B. the solution so obtained is not feasible
C. the few allocations become negative
D. none of the above

49 An alternative optimal solution to a minimization transportation problem exists whenever opportunity cost corresponding to unused routes of transportation is:
A. positive and greater than zero
B. positive with at least one equal to zero
C. negative with at least one equal to zero
D. all of the above

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