Class- TYBMS Sem- VI (2019-20)

Sub-Operation Research

Sample Questions

1. Who coined the term Operations Research?

   a) J.F. McCloskey and F.N.Trefethen b) P.F. Adams

   c) E.L. Arnoff d) M J Netzorg

2. Operations Research has the characteristics the it is done by a term of ___ .

   a) Scientists b) Mathematicians

   c) Academics d) Artist

3. 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.

4. Non-negativity condition is an important component of LP model because

   a) Variables value should remain under the control of the decision-maker

   b) Value of variables make sense & correspond to real-world problems

   c) Variables are interrelated in terms of limited resources

   d) Variables are not interrelated in terms of limited resources

5. Which of the following is not a characteristic of the LP model

   a) Alternative courses of action

   b) An objective function of maximization type

   c) Limited amount of resources

   d) Non-negativity condition on the value of decision variables.

6. Which of the following is not a characteristics of the LP

   a) Resources must be limited

   b) Only one objective function

   c) Parameters value remains constant during the planning period

d) The problems must be of minimization type

7. _____ assumptions means the prior knowledge of all the coefficients in the objective function, the coefficients of the constraints and the resource value.

   a) Proportionality b) Certainty

   c) Finite choices d) Continuity

8. The word 'Linear' means that the relationships are represented by____.

   a) Diagonal lines b) Curved lines

   c) Straight lines d) Slanting lines

9. A feasible solution to an LP problem

   a) Must satisfy all of the problem's constraints simultaneously

   b) Need not satisfy all of the constraints, only some of them

   c) Must be a corner point of the feasible region

   d) Must optimize the value of the objective function

10. Which of the following statements is true with respect to the optimal solution of an LP problem ?

    a) Every LP problem has an optimal solution

    b) Optimal solution of an LP problem always occurs at an extreme point

    c) At optimal solution all resources are completely used

    d) If an optimal solution exists, there will always be at least one at a corner

11. An iso-profit line represents

    a) An infinite number of solutions all of which yield the same profit

    b) An infinite number of solution all of which yield the same cost

    c) An infinite number of optimal solutions

    d) A boundary of the feasible region

12. While solving a LP model graphically, the area bounded by the constraints is called

    a) Feasible region b) Infeasible region

    c) Unbounded solution d) Bounded solution

13. Alternative solutions exist of an LP model when

    a) One of the constraints is redundant

    b) Objective function equation is parallel to one of the constraints

c) Two constraints are parallel

d) One constraints are parallel

14. While solving a LP problem, infeasibility may be removed by

a) Adding another constraint b) Adding another variable

c) Removing a constraint d) Removing a variable

15. Graphic method can be applied to solve a LPP when there are only _____ variable

a) Four b) More than One

c) Two d) Three

16. The method used for solving an assignment problem is called

a) Reduced matrix method b) MODI method

c) Hungarian method d) LCM method

17. The purchase 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) Obtain unbalance between total activities & total resources

18. If there were n workers & n jobs there would be

a) n! Solutions b) (n-1)! Solutions

c) (n!) solutions d) n solutions

19. For maximization in assignment problem, the objective is to maximize the _____ .

a) Profit b) optimization

c) cost d) Loss

20. If no, of rows are equal to number of columns and the Matrix elements are Time elements then the problem is :

a) Balanced and Minimization Transportation Problem

b) Unbalanced and Minimization Transportation Problem

c) Balanced and Minimization Assignment Problem

d) Unbalanced and Minimization Assignment Problem

21. If no. of rows are not equal to number of columns and the Matrix elements are Profit elements then the problem is :

a) Balanced and Maximization Transportation Problem

b) Unbalanced and Maximization Transportation Problem

c) Balanced and Maximization Assignment Problem

d) Unbalanced and Maximization Assignment Problem

22. 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) The solution not optimal

23. 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

24. 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

25. If Total Supply is equal to Total Demand and the Matrix elements are Time elements then the problem is

a) Balanced and Minimization Transportation Problem

b) Unbalanced and Minimization Transportation Problem

c) Balanced and Minimization Assignment Problem

d) Unbalanced and Minimization Assignment Problem

26. The solution of any transportation problem is obtained in how many stages?

a) Five b) Four c) Three d) Two

27. If demand is lesser than supply then dummy demand node is added to make it a _____ .

a) Simple problem b) Balanced problem

c) Transportation problem d) Unbalance problem

28. What network model enables engineer managers to schedule, monitor, and control large and

complex projects by using only one time factor per activity?

a) Forecasting b) Critical path method

c) Program evaluation review technique d) Simulation

29. What network model enables engineer managers to schedule, monitor, and control large and complex projects by employing three time estimate for each activity?

a) Forecasting b) Program evaluation review technique

c) Critical path method d) Simulation

30. For a project manager to have an effective means of identifying and communicating the planned activities and their interrelationships, he must use a network technique. One of the network techniques is commonly known as PERT. What does Pert stands for?

a) Project evaluation review technique b) Program evaluation review technique

c) Path evaluation review technique d) Program execution review technique

31. The CPM was developed by Rand and Walker in which year?

a) 1957 b) 1958

c) 1959 d) 1960

32. In what year was PERT developed?

a) 1957 b) 1959

c) 1960 d) 1958

33. At the completion of the forward and backward passes, the slack for an activity is given by the

a) difference between early start and early finish

b) difference between early start and latest finish

c) difference between latest start and early finish

d) amount of idle labor on the critical path

34. The basic difference between PERT and CPM is that

a) PERT deals with events and CPM with activities

b) Critical Path is determined in PERT only

c) Costs are considered on CPM only and not in PERT

d) Guessed times are used in PERT and evaluated times in CPM

35. The time by which activity completion time can be delayed without affecting the start of

succeeding activities, is known as :

a) Interfering float b) Total float

c) Duration d) Free float

36. The artificial activity which indicates that an activity following it, cannot be started unless the preceding activity is complete, is known as :

a) Free float b) Event

c) Dummy d) Constant

37. In PERT, slack time equals

a) EST + t b) LST – EST

c) Zero d) EFT – EST

38. A dummy activity is required when

a) Two or more activities have the same starting events.

b) Two or more activities have different ending events.

c) Two or more activities have the same ending events.

d) The network contains two or more activities that have identical starting and ending events.

39. Which of the following is not a concept associated with CPM

a) Normal Time b) Probability

c) Normal Cost c) Crash Cost

40. When a set of jobs must pass through two workstations whose sequence is fixed, _____ is the rule most commonly applied

a) Johnson's Rule b) Earliest Due Date Rule

c) First Come, First Serve Rule d) Slack Time Remaining

41. In sequencing if smallest time for a job belongs to machine- 1 then that job has to placed _____ of the sequence.

a) in the middle b) in the starting

c) at end d) in the second

42. The minimum processing time on machine M1 and M2 are related as

a) Min t1j = Max t2j b) Min t1j $\geq$ Max t2j

c) Min t1j $\leq$ Max t2j d) Min t2j $\geq$ Max t1j

43. Who developed the Game Theory.

a) J. R. Hicks b) William J. Baumol

c) Neumann Morgenstern d) Samuelson P. T.

44. What is a saddle point?

a) Equilibrium point b) Balanced Growth Point

c) Imbalanced Growth Point d) Unstable Equilibrium Point

45. In a constant sum game, what is true?

a) Both player get equal gains b) Both players adopt the same strategy

c) Mixed strategies are adopted by players d) What one player gains, the other loses

46. When minimax and the maximin in a pay off matrix are equal

a) It is a indeterminate solution

b) It is a strictly determined game

c) It can not be solved by a Two person constant sum game.

d) It can not be solved by zero sum game.

47. In game theory, a choice that is optimal for a firm no matter what its competitors do is referred to as

a) the dominant strategy. b) the game-winning choice.

c) super optimal. d) a gonzo selection.

48. Game theory is concerned with

a) predicting the results of bets placed on games like roulette

b) the choice of an optimal strategy in conflict situations

c) utility maximization by firms in perfectly competitive markets

d) the migration patterns of caribou in Alaska

49. 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

50. A strategy that is best regardless of what rival players do is called

a) first-mover advantage. b) a Nash equilibrium strategy

c) tit-for-tat. d) a dominant strategy.