PREVIEW QUESTION BANK

Module Name : imb24-mg41 Prescriptive Analytics-ENG
Exam Date : 18-May-2024 Batch : 09:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	15531001	A solution that satisfies all the constraints of linear programming problem is called 1. Feasible solution 2. Bounded solution 3. Unbounded solution 4. Degenerated solution A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
2	15531002	Any unbounded linear programming problem has 1. no bounded solutions 2. solutions that can be bounded or unbounded 3. a unique optimal solution 4. multiple optimal solutions A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
3	15531003	A linear programming problem which has no solution that satisfies all constraints simultaneously is 1. Feasible 2. Bounded 3. Unbounded 4. Infeasible A1 : 1	2.0	0.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
4	15531004	Slack variables are always 1. Positive only 2. Non-negative 3. Zero 4. Negative only A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
5	15531005	A variable in a linear programming problem is said to be unconstrained if there is 1. nonnegativity constraint on the variable 2. no nonnegativity constraint on the variable 3. only positivity constraint on the variable 4. only negativity constraint on the variable A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
6	15531006	A linear programming problem can have 1. no solution 2. exactly one solution 3. infinitely many optimal solutions 4. None of the above A1 : 1 A2 : 2	2.0	0.00

A3 : 3

A4 : 4

Objective Question

7	15531007	What is the optimal objective function value for the following LP: Maximize Z = 3x + 4y Subject to constraints, x + y ≤ 450, 2x + y ≤ 600 and x, y ≤ 0. 1. 0 2. 900 3. 1700 4. 1800 A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

8	15531008	The element found at the intersection of the pivot column and pivot row in a simplex tableau is called 1. Basic element 2. Pivot element 3. Non basic element 4. Important element A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

9	15531009	A pivot element is 1. always negative 2. always positive 3. always zero 4. always non-zero A1 : 1	2.0	0.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
10	15531010	In an LPP the objective function is 1. linear 2. Quadratic 3. Cubic 4. Bi-quadratic A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
11	15531011	If a constraint in the Primal LP is an equality constraint, then the corresponding dual variable in the Dual LP will be: 1. Positive 2. Negative 3. Unrestricted in sign 4. Zero A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
12	15531012	If there are only ______variables, Graphical Method can be applied to solve an LPP. Fill in the blank. 1. One 2. Two 3. Three 4. Four A1 : 1	2.0	0.00

A2 : 2

A3 : 3

A4 : 4

Objective Question

13	15531013	If in an LPP, the value of a variable can be made infinitely large without violating the constraints, the optimal solution is: 1. Infeasible 2. Unique 3. Unbounded 4. Not unique A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

14	15531014	The word “Linear” in LPP means that all constraints are represented by 1. Parabola 2. Hyperbola 3. Straight lines 4. Circles A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

15	15531015	A linear programming problem (LPP) that has two optimal solutions will have infinitely many solutions. 1. The above statement is always FALSE 2. The above statement is always TRUE 3. The above statement can be either TRUE oe FALSE depending on the problem 4. An LPP can never have infinitely many optimal solutions A1 : 1 A2 : 2	2.0	0.00

A3 : 3

A4 : 4

Objective Question

16	15531016	If a decision variable is not positive in the optimal solution, its reduced cost is: 1. what its objective function value would need to be before it could become positive 2. the amount its objective function value would need to increase before it could become positive 3. the amount its objective function value would need to decrease before it could become positive 4. the amount its objective function value would need to improve before it could become positive A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

17	15531017	Constraints in an LPP model represent 1. Limitations 2. Requirements 3. Balancing limitations and requirements 4. All the above A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

18	15531018	Rounding the solution of an LP Relaxation (of an IP minimization problem) to the nearest integer values provides: 1. a feasible but not necessarily optimal integer solution 2. an integer solution that is optimal 3. an integer solution that might be neither feasible nor optimal 4. an infeasible solution A1 : 1 A2 : 2	2.0	0.00

A3 : 3

A4 : 4

Objective Question

19	15531019	A toy company manufactures two types of toys A and B. Demand for toy B is at most half of that of toy A. Write the corresponding constraint if x toys of type A and y toys of type B are manufactured. 1. $x/2 \leq y$ 2. $2y - x \geq 0$ 3. $x - 2y \geq 0$ 4. $x < 2y$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

20	15531020	Infeasibility means that the number of solutions to the linear programming models that satisfies all constraints are 1. Only one 2. An infinite number 3. Zero 4. At least two A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

21	15531021	The objective function for a L.P model is 3x1 + 2x2, if the optimal solution is at (20,30), What is the value of the objective function? 1. 50 2. 130 3. 600 4. 120 A1 : 1 A2 : 2	2.0	0.00

A3 : 3

A4 : 4

Objective Question

22	15531022	In integer programming problems, binary variables are those which can take: 1. Only positive integer values 2. Any value between 0 and 1 3. Only 0 or 1 values 4. Any integer value A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

23	15531023	An integer variable in an integer programming problem can take values that are: 1. Any real number 2. Only odd numbers 3. Only even numbers 4. Only integers A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

24	15531024	Binary variables are often used in integer programming to represent: 1. number of units to produce 2. number of units to transport from origin i to destination j 3. number of facilities (such as service centres) to be made available 4. Either/or decisions A1 : 1 A2 : 2 A3 : 3	2.0	0.00

A4 : 4

Objective Question

25 15531025 | 2.0 | 0.00

Which of the following statements is true regarding the optimal solution of the LP relaxation of a problem with integer variables?

1. Will be an integer valued solution
2. Can be an integer valued solution but not always
3. Can never be an integer valued solution
4. Can be rounded off to obtain the optimal solution to the integer problem

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

26 15531026 | 2.0 | 0.00

A binary variable is sometimes called a:

1. Continuous variable
2. Integer variable
3. Dummy variable
4. Logical variable

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

27 15531027 | 2.0 | 0.00

Region represented by $x \geq 0$, $y \geq 0$ on a graph is the:

1. First Quadrant
2. Second Quadrant
3. Third Quadrant
4. Fourth Quadrant

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

28	15531028	Which of the following is NOT a characteristic of binary variables in integer programming? 1. They can only take the values 0 or 1 2. They represent yes/no decisions 3. They are used to model logical decisions 4. They are continuous variables A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

29	15531029	Which statement characterizes standard form of a linear programming problem? 1. Constraints are given by inequalities of any type 2. Constraints are given by a set of linear equations 3. Constraints are given only by inequalities of >= type 4. Constraints are given only by inequalities of <= type A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

30	15531030	The Goals in multi-criteria decision making are: 1. Fixed targets 2. Optional targets 3. Unimportant targets 4. Flexible targets A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question				
31	15531031	What is the main difference between goals and hard constraints in decision making? 1. Goals can be ignored, while hard constraints cannot be. 2. Goals are flexible, while hard constraints are fixed 3. Goals are fixed, while hard constraints are flexible 4. Hard constraints are subordinate to goals A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
32	15531032	Satisficing solutions in decision making refer to: 1. Solutions that barely meet the minimum requirements 2. Solutions that are constantly changing 3. Solutions that completely satisfy all criteria 4. Solutions that achieve the best possible outcome A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
33	15531033	The variable that is introduced in the simplex method to eliminate greater-than (>) constraints: 1. Artificial Variable 2. Basic Variable 3. Surplus Variable 4. Slack Variable A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question				
34	15531034	Identify the feasible region given by the set of constraints: x - y <= 1, x - y >= 2 where both x and y are positive. 1. A triangle 2. A rectangle 3. An unbounded region 4. No feasible region A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
35	15531035	A linear programming problem has 6 main constraints and 3 non negativity constraints corresponding to the variables in the problem. What is the upper bound for the number of extreme point candidates: 1. 504 2. 120 3. 20 4. 84 A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
36	15531036	Total number of constraints in a linear programming problem are: 1. Greater than the number of variables 2. Can be infinite in number 3. Finite in number 4. Equals to the number of variables A1 : 1 A2 : 2 A3 : 3	2.0	0.00

A4 : 4

Objective Question

37 15531037 2.0 0.00

The inequality x1 + 4x2 – 7x3 <= 11 can be converted into equality by using:

1. Slack Variable
2. Surplus Variable
3. Artificial variable
4. Any variable

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

38 15531038 2.0 0.00

Which one of the statements is true for a non-basic decision variable in linear programming where all variables have a zero lower bound and no upper bound?

1. A variable that can take any value in the optimal solution.
2. A variable with a non-zero value in the optimal solution.
3. A variable with a zero value in the optimal solution.
4. A slack variable.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

39 15531039 2.0 0.00

The type of problems that can be solved using prescriptive analytic techniques are:

1. Product Mix decisions
2. Location Decisions
3. Distribution Decisions
4. None of the above options

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

40	15531040	In the primal optimal solution, if the decision variable has non-zero value, then 1. The corresponding dual constraint will be a binding constraint 2. The corresponding dual constraint will be a non-binding constraint 3. The corresponding constraint dual variable is non-zero 4. The corresponding dual constraint may or may not be binding A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

41	15531041	In a linear programming problem, what does a non-negativity constraint represent? 1. That the decision variables must be greater than zero. 2. That the decision variables must be less than zero. 3. That the decision variables must be equal to zero. 4. That the decision variables can take any value. A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

42	15531042	For the LPP: Maximize Z = 3x + 5y, subject to: x + 4y ≤ 24, 3x + y ≤ 21, x + y ≤ 9, x ≥ 0, y ≥ 0, the optimal solution is: 1. (1, 0) 2. (0, 6) 3. (4, 5) 4. (6, 3) A1 : 1 A2 : 2	2.0	0.00

A3 : 3

A4 : 4

Objective Question

43	15531043	The maximum value of Z = 3x + 4y subjected to constraints x + y ≤ 4, x ≥ 0 and y ≥ 0 is: 1. 12 2. 14 3. 16 4. 20 A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

44	15531044	Which of the following problems is best suited for linear integer programming? 1. Scheduling employees to shifts 2. Modelling the behaviour of gases 3. Simulating the weather 4. Predicting stock market trends and graphs A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

45	15531045	A transportation problem where the total demand or requirement is equal to the total available resources is known as 1. Balanced transportation problem 2. Regular transportation problem 3. Resource allocation transportation problem 4. Simple transportation problem A1 : 1 A2 : 2	2.0	0.00

A3 : 3

A4 : 4

Objective Question

46	15531046	The objective function of a linear programming problem is 1. Not related to the decision variables 2. A function of the decision variables 3. A relationship between the decision variables 4. A function of the slack variables A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

47	15531047	The purpose of sensitivity analysis in prescriptive analytics is to analyze the impact of changes in _________on the optimal solution and objective function value. 1. Decision Variables 2. Input Parameters 3. Constraints 4. Uncertainty A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00

Objective Question

48	15531048	Sensitivity analysis is more complex in integer programming compared to linear programming because: 1. The constraints are non-linear 2. Integer programming does not involve constraints 3. The feasible region of an integer programming problem is discrete 4. Integer programming problems always have multiple optimal solutions A1 : 1 A2 : 2	2.0	0.00

		A3 : 3 A4 : 4		
Objective Question				
49	15531049	If at least one of the basic variables is zero in the optimal solution of an LPP, then the solution is: 1. Feasible Solution 2. Basic Solution 3. Degenerate basic solution 4. Non-degenerate basic solution A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00
Objective Question				
50	15531050	The best use of LPP models is to find an optimal use of 1. Money 2. Man power 3. Machine 4. All the above A1 : 1 A2 : 2 A3 : 3 A4 : 4	2.0	0.00