1. Optimization is the process of:
A) Finding all solutions
B) Finding the best solution
C) Eliminating variables
D) Solving equations
✅ Answer: B) Finding the best solution
2. The function to be maximized or minimized is called:
A) Constraint
B) Variable
C) Objective Function
D) Parameter
✅ Answer: C) Objective Function
3. Restrictions in an optimization problem are called:
A) Objectives
B) Constraints
C) Variables
D) Constants
✅ Answer: B) Constraints

4. Which of the following is a decision variable?
A) Fixed value
B) Unknown value to be determined
C) Constraint
D) Constant
✅ Answer: B) Unknown value to be determined
5. A problem with no constraints is called:
A) Linear problem
B) Dynamic problem
C) Unconstrained problem
D) Discrete problem
✅ Answer: C) Unconstrained problem
6. Linear programming deals with:
A) Non-linear equations
B) Linear objective and constraints
C) Only constraints
D) Only variables
✅ Answer: B) Linear objective and constraints

7. In discrete optimization, variables:
A) Take fractional values
B) Take integer values
C) Take negative values only
D) Are constant
✅ Answer: B) Take integer values
8. Which is an example of optimization?
A) Writing a program
B) Minimizing cost
C) Drawing a graph
D) Reading data
✅ Answer: B) Minimizing cost
9. A problem with more than one objective is called:
A) Single objective problem
B) Multi-objective problem
C) Linear problem
D) Static problem
✅ Answer: B) Multi-objective problem
10. Model formulation involves:
A) Drawing diagrams

B) Writing mathematical expressions
C) Coding only
D) Ignoring constraints
✅ Answer: B) Writing mathematical expressions
11. Which of the following is NOT part of optimization?
A) Decision variables
B) Objective function
C) Constraints
D) Random guessing
✅ Answer: D) Random guessing
12. Dynamic optimization involves:
A) Fixed parameters
B) Changing parameters over time
C) No variables
D) Only constants
✅ Answer: B) Changing parameters over time
13. A good model should be:
A) Complex

B) Simple and realistic
C) Impossible to solve
D) Random
✅ Answer: B) Simple and realistic
14. The first step in model formulation is:
A) Solve the model
B) Understand the problem
C) Write constraints
D) Draw graph
✅ Answer: B) Understand the problem
15. Which is NOT a type of optimization classification?
A) Linear
B) Non-linear
C) Circular
D) Discrete
✅ Answer: C) Circular
16. Objective function represents:
A) Limitation
B) Goal of the problem
C) Variable

D) Constant

✅ Answer: B) Goal of the problem

17. Continuous optimization allows variables to:

A) Take only integers

B) Take any real value

C) Be constant

D) Be negative only

✅ Answer: B) Take any real value

18. Constraints are usually expressed as:

A) Inequalities or equations

B) Paragraphs

C) Tables

D) Graphs only

✅ Answer: A) Inequalities or equations

19. Which is an example of a constraint?

A) Maximize profit

B) $x + y \leq 10$

C) Profit = $50x$

D) Variable x

✅ Answer: B) $x + y \leq 10$

20. The art of modeling mainly focuses on:
A) Coding
B) Creativity and simplification
C) Solving only
D) Drawing graphs
✅ Answer: B) Creativity and simplification