Questions

1. **Which of the following is not a linear data structure?**
   1) Array
   2) Linked list
   3) Stack
   4) Tree
2. **Which data structure is best suited for implementing a LIFO (Last-In-First-Out) structure?**
   1) Queue
   2) Linked list
   3) Stack
   4) Tree
3. **Which of the following data structures can be used to implement a priority queue?**
   1) Array
   2) Linked list
   3) Queue
   4) Binary heap
4. **Which data structure is used for efficient search, insertion and deletion operations?**
   1) Array
   2) Linked list
   3) Stack
   4) Tree
5. **Which of the following data structures is a non-linear data structure?**
   1) Array
   2) Linked list
   3) Stack
   4) Tree
6. **Which data structure uses the FIFO (First-In-First-Out) principle?**
   1) Stack
   2) Linked list
   3) Queue
   4) Tree
7. **Which data structure is used for searching, sorting and merging operations?**
   1) Array
   2) Linked list
   3) Stack
   4) Tree
8. **Which of the following is not a type of tree data structure?**
   1) Binary tree
   2) AVL tree
   3) Heap tree
   4) Linked list
9. **Which data structure uses a combination of both array and linked list structures?**
   1) Stack
   2) Queue
   3) Hash table
   4) Deque
10. **Which data structure is used for storing key-value pairs and offers fast insertion, deletion and lookup operations?**
    1) Array
    2) Linked list
    3) Hash table
    4) Binary search tree
11. **Which data structure is used to store a collection of elements in a specific order?**
    1) Stack
    2) Queue
    3) Linked List
    4) Array

12. Which data structure allows access to its elements in constant time, regardless of the size of the data?
    1) Stack
    2) Queue
    3) Linked List
    4) Hash Table
13. Which data structure uses a binary tree to store its elements?
    1) Stack
    2) Queue
    3) Heap
    4) Hash Table
14. Which data structure is a collection of key-value pairs where each key is associated with a value?
    1) Stack
    2) Queue
    3) Linked List
    4) Hash Table
15. Which data structure is a list of nodes where each node points to its successor?
    1) Stack
    2) Queue
    3) Linked List
    4) Tree
16. Which data structure is based on the principle of last-in-first-out (LIFO)?
    1) Stack
    2) Queue
    3) Linked List
    4) Tree
17. Which data structure is based on the principle of first-in-first-out (FIFO)?
    1) Stack
    2) Queue
    3) Linked List
    4) Tree
18. Which data structure uses a set of rules to determine which element to remove when there is a conflict during insertion?
    1) Stack
    2) Queue
    3) Linked List
    4) Tree
19. Which data structure is used to represent a hierarchical structure?
    1) Stack
    2) Queue
    3) Linked List
    4) Tree
20. Which data structure is used to store elements in a sorted order?
    1) Stack
    2) Queue
    3) Linked List
    4) Tree
21. Which of the following is not a linear data structure?
    1) Array
    2) Linked List
    3) Stack
    4) Tree
22. What is the time complexity of accessing an element in an array?
    1) O(1)
    2) O(log n)
    3) O(n)
    4) O(n^2)
23. Which data structure uses Last-In-First-Out (LIFO) behavior?
    1) Queue
    2) Stack
    3) Linked List
    4) Binary Tree
24. Which sorting algorithm has the worst-case time complexity of O(n^2)?
    1) Quick Sort
    2) Merge Sort
    3) Heap Sort
    4) Bubble Sort
25. What is the time complexity of searching for an element in a hash table in the worst case?
    1) O(1)
    2) O(log n)
    3) O(n)
    4) O(n^2)
26. Which data structure allows you to access elements from both ends in constant time?
    1) Queue
    2) Stack
    3) Linked List
    4) Deque
27. Which of the following data structures does not store elements in a contiguous block of memory?
    1) Array
    2) Linked List
    3) Stack
    4) Queue
28. Which data structure is used to implement a FIFO (First-In-First-Out) behavior?
    1) Queue
    2) Stack
    3) Linked List
    4) Binary Tree
29. What is the time complexity of merging two sorted arrays of size n and m?
    1) O(n)
    2) O(m)
    3) O(n log m)
    4) O(n + m)
30. Which data structure is used to implement the heap data structure?
    1) Linked List
    2) Stack
    3) Queue
    4) Array
31. Which of the following is not a linear data structure?
    1) Array
    2) Linked List
    3) Stack
    4) Tree
32. Which of the following data structures uses a "last in, first out" (LIFO) ordering?
    1) Queue
    2) Stack
    3) Binary Tree
    4) Heap
33. What is the time complexity of searching for an element in a binary search tree?
    1) O(1)
    2) O(log n)
    3) O(n)
    4) O(n^2)
34. Which of the following sorting algorithms has the best worst-case time complexity?
    1) Bubble Sort
    2) Quick Sort
    3) Selection Sort
    4) Insertion Sort
35. Which of the following data structures uses a "first in, first out" (FIFO) ordering?
    1) Queue
    2) Stack
    3) Binary Tree
    4) Heap

36. Which of the following is not a type of tree data structure?
    1) Binary Tree
    2) Trie
    3) AVL Tree
    4) Hash Table
37. What is the time complexity of finding an element in a hash table in the average case?
    1) O(1)
    2) O(log n)
    3) O(n)
    4) O(n^2)
38. Which data structure allows you to access elements from both ends in constant time?
    1) Queue
    2) Stack
    3) Linked List
    4) Deque
39. Which of the following is not a type of graph data structure?
    1) Directed Graph
    2) Undirected Graph
    3) Tree Graph
    4) Weighted Graph
40. Which data structure is typically used to implement a priority queue?
    1) Queue
    2) Stack
    3) Heap
    4) Linked List
41. Which of the following data structures is used to represent a hierarchy?
    1) Stack
    2) Queue
    3) Tree
    4) Hash Table
42. What is the time complexity of merging two sorted arrays of size n and m?
    1) O(n)
    2) O(m)
    3) O(n log m)
    4) O(n + m)
43. Which of the following data structures is used to store and manipulate data in the form of key-value pairs?
    1) Array
    2) Linked List
    3) Hash Table
    4) Binary Tree
44. Which of the following is not a common application of stacks?
    1) Expression Evaluation
    2) Reverse a String
    3) Depth-First Search
    4) Breadth-First Search
45. Which of the following is not a common application of queues?
    1) Breadth-First Search
    2) Round-Robin Scheduling
    3) Depth-First Search
    4) Task Processing
46. Which of the following data structures is used to implement a graph data structure?
    1) Linked List
    2) Stack
    3) Queue
    4) Adjacency List
47. Which of the following data structures is used to implement a binary search?
    1) Stack
    2) Queue
    3) Linked List
    4) Array

48. Which of the following is not a type of hash function?
    1) Division Method
    2) Multiplication Method
    3) Mid-Square Method
    4) All of the above are types of hash functions.
49. Which of the following is not a common application of trees?
    1) File System Organization
    2) Network Routing Algorithms
    3) Huffman Coding
    4) All of the above are common applications of trees.
50. Which data structure uses the "last-in, first-out" (LIFO) principle?
    a) Queue
    b) Stack
    c) Linked List
    d) Tree
51. What is the worst-case time complexity of searching an element in a binary search tree?
    a) O(1)
    b) O(n)
    c) O(log n)
    d) O(n log n)
52. Which of the following is not a linear data structure?
    a) Stack
    b) Queue
    c) Linked List
    d) Binary Tree
53. Which data structure allows elements to be inserted and deleted from both ends?
    a) Stack
    b) Queue
    c) Deque
    d) Linked List
54. What is the maximum number of child nodes a node can have in a binary tree?
    a) 1
    b) 2
    c) 3
    d) Unlimited
55. Which of the following sorting algorithms has the worst-case time complexity of O(n^2)?
    a) Bubble Sort
    b) Merge Sort
    c) Quick Sort
    d) Insertion Sort
56. Which of the following data structures is best suited for implementing a priority queue?
    a) Stack
    b) Queue
    c) Heap
    d) Linked List
57. Which of the following operations can be performed in constant time in a hash table?
    a) Insert
    b) Delete
    c) Search
    d) All of the above
58. Which of the following data structures is a dynamic set data structure that supports O(1) search, insert,and delete operations?
    a) Stack
    b) Queue
    c) Heap
    d) Hash Table

59. Which of the following data structures is used to implement a graph?
    a) Array
    b) Stack
    c) Queue
    d) Adjacency List
60. What is the time complexity of searching for an element in an array?
    a) O(n)
    b) O(log n)
    c) O(1)
    d) O(n log n)
61. Which data structure allows elements to be accessed in a random order?
    a) Linked List
    b) Stack
    c) Queue
    d) Array
62. What is the time complexity of inserting an element at the end of a singly linked list?
    a) O(1)
    b) O(n)
    c) O(log n)
    d) O(n log n)
63. Which data structure is based on the principle of "first-in, first-out" (FIFO)?
    a) Stack
    b) Queue
    c) Linked List
    d) Tree
64. Which of the following data structures is a collection of elements that allows duplicate elements?
    a) Set
    b) Map
    c) List
    d) Queue
65. Which of the following data structures is a tree in which each node can have at most two children?
    a) Binary Tree
    b) Ternary Tree
    c) Quadtree
    d) Octree
66. Which of the following data structures is used to implement a stack?
    a) Array
    b) Linked List
    c) Queue
    d) Hash Table
67. Which of the following sorting algorithms has a best-case time complexity of O(n log n)?
    a) Bubble Sort
    b) Insertion Sort
    c) Quick Sort
    d) Merge Sort
68. Which data structure is a special case of a graph where there are no cycles?
    a) Binary Tree
    b) Directed Acyclic Graph (DAG)
    c) Undirected Graph
    d) Heap
69. Which of the following operations can be performed in constant time in a stack?
    a) Insert
    b) Delete
    c) Search
    d) Push and Pop
70. Which of the following data structures uses a hash function to store and retrieve data efficiently?
    a) Linked List
    b) Stack
    c) Queue
    d) Hash Table
71. What is the time complexity of finding the maximum or minimum element in a binary heap?
    a) O(n)
    b) O(log n)
    c) O(n log n)
    d) O(1)
72. Which of the following data structures is a collection of elements that are stored in a sorted order?
    a) Heap
    b) Hash Table
    c) Binary Search Tree
    d) Stack
73. Which of the following data structures uses the "first-in, first-out" (FIFO) principle?
    a) Stack
    b) Queue
    c) Linked List
    d) Tree
74. What is the time complexity of deleting an element from a binary search tree?
    a) O(1)
    b) O(n)
    c) O(log n)
    d) O(n log n)
75. Which of the following data structures is used to implement a heap?
    a) Array
    b) Linked List
    c) Queue
    d) Stack
76. Which of the following data structures is used to implement a hash table?
    a) Array
    b) Linked List
    c) Queue
    d) Stack
77. Which of the following sorting algorithms has the worst-case time complexity of O(n log n)?
    a) Bubble Sort
    b) Insertion Sort
    c) Quick Sort
    d) Merge Sort
78. Which data structure is used to implement a breadth-first search (BFS) algorithm?
    a) Queue
    b) Stack
    c) Linked List
    d) Binary Search Tree
79. Which of the following operations can be performed in constant time in a queue?
    a) Insert
    b) Delete
    c) Search
    d) Enqueue and Dequeue
80. Which of the following data structures allows for constant time access to an element by its index?
    a) Linked List
    b) Stack
    c) Queue
    d) Array
81. Which of the following data structures is a tree in which each node has at most one child?
    a) Binary Tree
    b) AVL Tree
    c) B-Tree
    d) Binary Search Tree

82. What is the time complexity of inserting an element at the beginning of a singly linked list?
a) O(1)
b) O(n)
c) O(log n)
d) O(n log n)

83. Which of the following data structures is a collection of elements that are stored in a sorted order andallows for efficient insertion and deletion of elements?
a) Heap
b) Hash Table
c) Binary Search Tree
d) Queue

84. Which of the following data structures is used to implement a priority queue?
a) Stack
b) Queue
c) Linked List
d) Heap

85. What is the time complexity of searching for an element in a binary search tree?
a) O(1)
b) O(n)
c) O(log n)
d) O(n log n)

86. Which of the following sorting algorithms has the best-case time complexity of O(n)?
a) Bubble Sort
b) Insertion Sort
c) Selection Sort
d) Quick Sort

87. Which of the following data structures is used to implement a disjoint set data structure?
a) Stack
b) Queue
c) Heap
d) Union-Find Data Structure

88. Which of the following data structures is used to implement a breadth-first search (BFS) algorithm?
a) Queue
b) Stack
c) Linked List
d) Binary Search Tree

89. Which of the following operations can be performed in constant time in a hash table?
a) Insert
b) Delete
c) Search
d) All of the above

90. Which of the following data structures is used to implement a LIFO (Last-In, First-Out) behavior?
a) Stack
b) Queue
c) Linked List
d) Binary Search Tree

91. What is the worst-case time complexity of searching for an element in a hash table?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

92. Which of the following data structures is used to implement an ordered list with no duplicates?
a) Heap
b) Binary Search Tree

c) Hash Table
d) Linked List

93. Which of the following data structures is used to implement a disjoint set data structure?
a) Stack
b) Queue
c) Heap
d) Union-Find Data Structure

94. What is the time complexity of inserting an element at the end of a singly linked list?
a) O(1)
b) O(n)
c) O(log n)
d) O(n log n)

95. Which of the following sorting algorithms is an in-place sorting algorithm?
a) Merge Sort
b) Quick Sort
c) Heap Sort
d) Insertion Sort

96. Which of the following data structures is used to implement a balanced binary search tree?
a) AVL Tree
b) B-Tree
c) Red-Black Tree
d) Trie

97. Which of the following data structures is used to implement a graph?
a) Array
b) Linked List
c) Queue
d) All of the above

98. What is the time complexity of finding the kth smallest element in a binary search tree?
a) O(1)
b) O(n)
c) O(log n)
d) O(n log n)

99. Which of the following operations can be performed in constant time in a stack?
a) Push
b) Pop
c) Peek
d) All of the above

100. Which of the following data structures is used to implement a FIFO (First-In, First-Out) behavior?
a) Queue
b) Stack
c) Binary Search Tree
d) Heap

101. What is the worst-case time complexity of searching for an element in a binary search tree?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

102. Which of the following data structures is used to implement a priority queue?
a) Heap
b) Queue
c) Stack
d) Linked List

103. What is the time complexity of inserting an element into a binary searchtree?
a) O(1)
b) O(log n)
c) O(n)

d) O(n log n)

104. **Which of the following data structures is used to implement a set with no duplicates?**
   a) Heap
   b) Linked List
   c) Hash Table
   d) Binary Search Tree

105. **Which of the following sorting algorithms has a worst-case time complexity of O(n^2)?**
   a) Quick Sort
   b) Heap Sort
   c) Merge Sort
   d) Insertion Sort

106. **Which of the following data structures is used to implement a stack?**
   a) Linked List
   b) Array
   c) Queue
   d) Heap

107. **Which of the following data structures is used to implement a breadth-first search on a graph?**
   a) Stack
   b) Queue
   c) Binary Search Tree
   d) Heap

108. **What is the time complexity of finding the maximum element in a max heap?**
   a) O(1)
   b) O(log n)
   c) O(n)
   d) O(n log n)

109. **Which of the following operations can be performed in constant time in a hash table?**
   a) Insertion
   b) Deletion
   c) Search
   d) All of the above

110. **Which of the following data structures is used to implement a LIFO (Last-In, First-Out) behavior?**
   a) Queue
   b) Stack
   c) Binary Search Tree
   d) Heap

111. **What is the worst-case time complexity of inserting an element into a hash table?**
   a) O(1)
   b) O(log n)
   c) O(n)
   d) O(n log n)

112. **Which of the following data structures is used to implement a graph?**
   a) Heap
   b) Queue
   c) Stack
   d) Adjacency List

113. **What is the time complexity of finding an element in a hash table?**
   a) O(1)
   b) O(log n)
   c) O(n)
   d) O(n log n)

114. **Which of the following data structures is used to implement a deque (double-ended queue)?**
   a) Queue
   b) Stack
   c) Linked List
   d) Binary Search Tree

115. **Which of the following sorting algorithms has a worst-case time complexity of O(n log n)?**
   a) Quick Sort
   b) Heap Sort
   c) Merge Sort
   d) Insertion Sort

116. **Which of the following data structures is used to implement a priority queue with a decrease-key operation?**
   a) Heap
   b) Queue
   c) Stack
   d) Linked List

117. **Which of the following data structures is used to implement a depth-first search on a graph?**
   a) Stack
   b) Queue
   c) Binary Search Tree
   d) Heap

118. **What is the time complexity of finding the minimum element in a min heap?**
   a) O(1)
   b) O(log n)
   c) O(n)
   d) O(n log n)

119. **Which of the following operations can be performed in constant time in a circular buffer?**
   a) Insertion
   b) Deletion
   c) Search
   d) None of the above

120. **What is the time complexity of finding the kth smallest element in an unsorted array?**
   a) O(n log n)
   b) O(n)
   c) O(n^2)
   d) O(log n)

121. **Which of the following data structures is used to implement a Red-Black Tree?**
   a) AVL Tree
   b) Heap
   c) Binary Search Tree
   d) B-Tree

122. **What is the time complexity of finding the maximum element in a max heap?**
   a) O(1)
   b) O(log n)
   c) O(n)
   d) O(n log n)

123. **Which of the following data structures is used to implement a set that maintains a sorted order of elements?**
   a) Binary Search Tree
   b) AVL Tree
   c) Hash Table
   d) Heap

124. **What is the time complexity of finding the shortest path between two vertices in a weighted graph using Dijkstra's algorithm?**
   a) O(n log n)
   b) O(n^2)
   c) O(m log n)
   d) O(m + n log n)

125. **Which of the following sorting algorithms has the worst space complexity?**
   a) Bubble Sort
   b) Selection Sort
   c) Quick Sort
   d) Merge Sort

126. **Which of the following data structures is used to implement a disjoint-set data structure?**

a) Heap
b) Queue
c) Binary Search Tree
d) Union-Find Array

127. What is the time complexity of finding the median of a sorted array of size n?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

128. Which of the following data structures is used to implement a Bloom Filter?
a) Hash Table
b) AVL Tree
c) Binary Search Tree
d) Bit Array

129. Which of the following algorithms is used to find the strongly connected components in a directed graph?
a) Dijkstra's algorithm
b) Bellman-Ford algorithm
c) Kruskal's algorithm
d) Tarjan's algorithm

130. Which of the following algorithms is used to find the minimum spanning tree in a weighted, connected graph?
a) Dijkstra's algorithm
b) Bellman-Ford algorithm
c) Kruskal's algorithm
d) Topological sort

131. Which of the following data structures is used to implement a Trie?
a) Binary Search Tree
b) Hash Table
c) Heap
d) Tree

132. What is the time complexity of finding the maximum element in a binary search tree?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

133. Which of the following sorting algorithms is not an in-place algorithm?
a) Heap Sort
b) Quick Sort
c) Merge Sort
d) Insertion Sort

134. What is the time complexity of finding the maximum flow in a flow network using the Ford-Fulkerson algorithm?
a) O(m log n)
b) O(n^2)
c) O(mn)
d) O(fmax * m)

135. Which of the following data structures is used to implement a priority queue?
a) Hash Table
b) AVL Tree
c) Heap
d) Binary Search Tree

136. What is the time complexity of finding the kth smallest element in a binary search tree?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

137. Which of the following algorithms is used to perform binary search on a sorted array?
a) Depth-First Search
b) Breadth-First Search
c) Linear Search
d) None of the above

138. Which of the following data structures is used to implement a cache?
a) Queue
b) Stack
c) Heap
d) Hash Table

139. What is the time complexity of inserting a new element into a hash table with open addressing?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

140. Which of the following data structures is used to implement Dijkstra's algorithm for finding the shortest path in a graph?
a) Binary Search Tree
b) AVL Tree
c) Heap
d) Hash Table

141. Which of the following is an example of a non-linear data structure?
a) Array
b) Stack
c) Queue
d) Graph

142. Which of the following algorithms can be used to detect cycles in a graph?
a) Depth-First Search
b) Breadth-First Search
c) Topological Sort
d) All of the above

143. Which of the following is not a self-balancing binary search tree?
a) AVL Tree
b) Red-Black Tree
c) Splay Tree
d) B-Tree

144. What is the worst-case time complexity of the heapify operation in a binary heap?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

145. Which of the following is an example of an external sorting algorithm?
a) Quick Sort
b) Merge Sort
c) Heap Sort
d) Insertion Sort

146. Which of the following data structures is used to implement a LRU cache?
a) Hash Table
b) Stack
c) Queue
d) Linked List

147. Which of the following algorithms can be used to find the shortest path in a graph with negative edge weights?
a) Dijkstra's algorithm
b) Bellman-Ford algorithm
c) Floyd-Warshall algorithm
d) A* algorithm

148. Which of the following data structures is used to implement a Red-Black Tree?
a) Hash Table
b) Heap

c) AVL Tree
d) None of the above

149. What is the time complexity of the search operation in a skip list?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

150. Which data structure is used to implement a priority queue?
a) Linked List
b) Hash Table
c) Stack
d) Heap

151. Which of the following sorting algorithms has the highest worst-case time complexity?
a) Quick Sort
b) Heap Sort
c) Merge Sort
d) Insertion Sort

152. Which of the following data structures is used to implement a symbol table?
a) Linked List
b) Hash Table
c) Heap
d) Stack

153. Which of the following is an example of a dynamic programming algorithm?
a) Dijkstra's algorithm
b) Kruskal's algorithm
c) Floyd-Warshall algorithm
d) Topological Sort

154. Which of the following data structures is used to implement a Trie?
a) Hash Table
b) Heap
c) Linked List
d) Tree

155. Which of the following is not a common operation on a Binary Search Tree?
a) Insertion
b) Deletion
c) Heapify
d) Searching

156. Which of the following algorithms can be used to find the longest common subsequence of two strings?
a) Breadth-First Search
b) Depth-First Search
c) Dijkstra's algorithm
d) Dynamic Programming

157. Which of the following data structures is used to implement a Fibonacci Heap?
a) Hash Table
b) AVL Tree
c) Binary Heap
d) None of the above

158. Which of the following is a hash function used in the chaining method of collision resolution?
a) Division
b) Multiplication
c) XOR
d) All of the above

159. Which of the following algorithms can be used to find the strongly connected components of a directed graph?
a) Breadth-First Search
b) Depth-First Search
c) Dijkstra's algorithm
d) Prim's algorithm

160. Which of the following data structures is used to implement a LIFO stack?
a) Linked List
b) Array
c) Queue
d) Tree

161. Which of the following sorting algorithms is stable?
a) Quick Sort
b) Selection Sort
c) Heap Sort
d) Merge Sort

162. Which of the following is not a common operation on a Hash Table?
a) Insertion
b) Deletion
c) Searching
d) Heapify

163. Which of the following data structures is used to implement a Queue?
a) Linked List
b) Hash Table
c) Tree
d) Stack

164. Which of the following is not a type of Binary Tree?
a) AVL Tree
b) Red-Black Tree
c) B-Tree
d) Fibonacci Tree

165. Which of the following algorithms can be used to find the shortest path in a weighted graph?
a) Breadth-First Search
b) Depth-First Search
c) Dijkstra's algorithm
d) Topological Sort

166. Which of the following is not a common application of a Heap?
a) Implementing a Priority Queue
b) Sorting
c) Huffman Coding
d) Hashing

167. Which of the following data structures is used to implement a disjoint-set data structure?
a) Array
b) Hash Table
c) Linked List
d) Tree

168. Which of the following algorithms can be used to find the minimum spanning tree of a graph?
a) Breadth-First Search
b) Depth-First Search
c) Dijkstra's algorithm
d) Prim's algorithm

169. Which of the following data structures is used to implement a LRU cache?
a) Stack
b) Queue
c) Hash Table
d) Linked List

170. What is the order of traversal in preorder traversal?
a) Root, left subtree, right subtree
b) Left subtree, root, right subtree
c) Right subtree, root, left subtree
d) None of the above

171. What is the order of traversal in postorder traversal?
a) Root, left subtree, right subtree

b) Left subtree, root, right subtree
c) Right subtree, root, left subtree
d) None of the above

172. **Which of the following statements is true regarding preorder and postorder traversal?**
a) Preorder traversal is always faster than postorder traversal
b) Postorder traversal is always faster than preorder traversal
c) The time complexity of both preorder and postorder traversal is O(n)
d) The time complexity of both preorder and postorder traversal is O(log n)

173. **Which traversal is used to create a copy of a binary tree?**
a) Preorder traversal
b) Postorder traversal
c) Inorder traversal
d) Breadth-first traversal

174. **Which traversal is used to evaluate a binary expression tree?**
a) Preorder traversal
b) Postorder traversal
c) Inorder traversal
d) Breadth-first traversal

175. **What is the time complexity of both preorder and postorder traversal of a binary tree?**
a) O(n)
b) O(log n)
c) O(n log n)
d) O(n^2)

176. **In which traversal technique, a node is visited after its subtree?**
a) Preorder traversal
b) Postorder traversal
c) Inorder traversal
d) Level-order traversal

177. **What is the correct sequence of nodes visited in the following binary tree during preorder traversal:**

```
    5
   / \
  2   8
 / \
1 4 9
```

a) 5, 2, 1, 4, 8, 9
b) 5, 2, 8, 1, 4, 9
c) 5, 8, 2, 4, 1, 9
d) 5, 2, 1, 8, 4, 9

178. **What is the correct sequence of nodes visited in the following binary tree during postorder traversal:**

```
    5
   / \
  2   8
 / \
1 4 9
```

a) 1, 4, 2, 9, 8, 5
b) 1, 4, 2, 9, 5, 8
c) 4, 1, 9, 2, 8, 5
d) 1, 4, 9, 2, 8, 5

179. **Which traversal technique is used to find the height of a binary tree?**
a) Preorder traversal
b) Postorder traversal
c) Inorder traversal
d) Level-order traversal

Answer Sheet

1	D	2	C	3	D	4	D	5	D	6	C	7	A	8	D	9	D
10	C	11	D	12	D	13	C	14	D	15	C	16	A	17	B	18	D
19	D	20	D	21	D	22	A	23	B	24	D	25	C	26	D	27	B
28	A	29	D	30	D	31	D	32	B	33	B	34	A	35	A	36	D
37	A	38	D	39	C	40	C	41	C	42	D	43	C	44	C	45	C
46	D	47	D	48	D	49	D	50	B	51	C	52	D	53	C	54	B
55	A	56	C	57	D	58	D	59	D	60	A	61	D	62	A	63	B
64	C	65	A	66	B	67	D	68	B	69	D	70	D	71	D	72	C
73	B	74	C	75	A	76	B	77	D	78	A	79	D	80	D	81	A
82	A	83	C	84	D	85	C	86	D	87	D	88	A	89	D	90	A
91	B	92	B	93	D	94	B	95	D	96	C	97	D	98	C	99	D
100	A	101	B	102	A	103	B	104	D	105	D	106	A	107	B	108	A
109	D	110	B	111	A	112	D	113	A	114	C	115	C	116	A	117	A
118	A	119	A	120	B	121	A	122	A	123	A	124	D	125	A	126	D
127	B	128	D	129	D	130	C	131	D	132	B	133	C	134	D	135	C
136	B	137	D	138	D	139	C	140	C	141	D	142	A	145	D	144	B
145	B	146	D	147	B	148	D	149	B	150	D	151	B	152	B	153	D
154	D	155	C	156	D	157	C	158	D	159	B	160	A	161	D	162	D
163	A	164	D	165	C	166	D	167	D	168	D	169	D	170	A	171	C
172	C	173	B	174	B	175	A	176	B	177	A	178	D	179	B		