Asymptotic Analysis MCQ Questions & Answers

This section focuses on "Asymptotic Analysis" of Data Structures. These Multiple Choice Questions (MCQ) should be practiced to improve the Data Structure skills required for various interviews (campus interviews, walk-in interviews, company interviews), placements, entrance exams and other competitive examinations.

1. _____ of an algorithm refers to defining the mathematical boundation/framing of its run-time performance.

A. Symptotic analysis
B. Asymptotic analysis
C. Posterior Analysis
D. Priori Analysis

View Answer

Ans : B
Explanation: Asymptotic analysis of an algorithm refers to defining the mathematical boundation/framing of its run-time performance.

2. Using asymptotic analysis, we can very well conclude the _____ scenario of an algorithm.

A. best case
B. average case
C. worst case
D. best case, average case, and worst case

View Answer

Ans : D
Explanation: Using asymptotic analysis, we can very well conclude the best case, average case, and worst case scenario of an algorithm.

3. Which case indicate the minimum time required for program execution?

A. best case
B. average case
C. worst case
D. None of the above

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Ans : A
Explanation: Best Case : Minimum time required for program execution.

4. _____ is the formal way to express the upper bound of an algorithm's running time.

A. Omega Notation
B. Theta Notation
C. Big Oh Notation
D. All of the above

View Answer

Ans : C
Explanation: The notation O(n) is the formal way to express the upper bound of an algorithm's running time. It measures the worst case time complexity or the longest amount of time an algorithm can possibly take to complete.

5. Worst Case indicates maximum time required for program execution.

A. Yes
B. No
C. Can be yes or no
D. Can not say

View Answer

Ans : A
Explanation: Yes, Worst Case indicate maximum time required for program execution

6. Which of the following is linear asymptotic notations?

A. O(1)
B. O(log n)
C. O(n)
D. O(n log n)

View Answer

Ans : C
Explanation: linear : O(n)

7. O(log n) is?

A. constant asymptotic notations
B. logarithmic asymptotic notations
C. polynomial asymptotic notations
D. quadratic asymptotic notations

View Answer

Ans : B
Explanation: logarithmic : O(log n)

8. Omega Notation is the formal way to express the lower bound of an algorithm's running time.

A. TRUE
B. FALSE
C. Can be true or false
D. Can not say

View Answer

Ans : A
Explanation: True, Omega Notation is the formal way to express the lower bound of an algorithm's running time.

9. The Theta notation is the formal way to express _____ of an algorithm's running time.

A. upper bound
B. lower bound
C. lower bound and upper bound
D. None of the above

View Answer

Ans : C
Explanation: The notation θ(n) is the formal way to express both the lower bound and the upper bound of an algorithm's running time.