

AMCAT Complexity Theory Questions

Question 1

In case of the worst timing, which might be the worst to implement in sorting algorithm?

- A. Quick
- B. Merge
- C. Tim
- D. Heap

Answer: Option A

Explanation: Quick sort has worse time complexity of $O(n^2)$

Question 2

In case of the worst timing, which might be the worst to implement in sorting algorithm?

- A. Quick
- B. Merge
- C. Tim
- D. Heap

Answer: Option C

Explanation: Quick sort has worse time complexity of $O(n^2)$

Question 3

There are 2 buildings and on each's window, a flower pot is kept. Ravi's mother tells him to add each cell/window to the other and store in a matrix? What would be time complexity if he writes a code to do so?

- A. $\Theta(n)$
- B. $\Theta(\log n)$
- C. $\Theta(n^2)$
- D. $\Theta(n \log n)$

Answer: Option A

Question 4

Which of the following has the quickest average time complexity?

- A. Quick
- B. Radix
- C. Bubble
- D. Heap

Answer: Option B

Explanation: Radix sort is quickest amongst these in average time

Question 5

In regards to time complexity which will perform better $\omega(n^4)$ or $O(n^3)$?

- A. $\omega(n^4)$
- B. $O(n^3)$
- C. Both Equally
- D. Cannot be said

Answer: Option A

Explanation: $\omega(n^4)$ as it is omega is measured for best time complexity

Question 6

Which of the following case does not exist in complexity theory?

- A. Best case
- B. Worst case
- C. Average case
- D. Null case

Answer: Option D

Explanation: Null case does not exist in complexity Theory.

Question 7

The complexity of linear search algorithm is

- A. $O(n)$
- B. $O(\log n)$
- C. $O(n^2)$
- D. $O(n \log n)$

Answer: Option A

Explanation: The worst case complexity of linear search is $O(n)$.

Question 8

The Worst case occur in linear search algorithm when

- A. Item is somewhere in the middle of the array
- B. Item is not in the array at all
- C. Item is the last element in the array
- D. Item is the last element in the array or is not there at all

Answer: Option D

Explanation: The Worst case occur in linear search algorithm when Item is the last element in the array or is not there at all.

Question 9

What is space complexity of the program?

- A. Amount of hard disk space required to store the program.

- B. Amount of hard disk space required to compile the program.
- C. Amount of memory required by the program to run.
- D. Amount of memory required by the program to compile.

Answer: Option C

Question 10

A code with $\theta(n)$ and $\theta(n^2)$. Which code will execute faster for a code of size J?

- A. $\theta(n)$
- B. $\theta(n^2)$
- C. Cannot be said as size of K is unknown
- D. Both will be equal

Answer: Option C