

DAY-01

Q. Data structures is a ____.

- A. software
- B. programming language
- C. programming concept
- D. all of the above
- E. none of the above

Answer: C

Q. During program execution data gets processed which is inside ____

- A. the disk
- B. the main memory
- C. both options A & B
- D. none of the above

Answer: B

Q. If an algorithm takes maximum amount of time to run to completion then it is referred as

- A. best case time complexity
- B. average case time complexity
- C. worst case time complexity
- D. all of the above
- E. none of the above

Answer: C

Q. Which of the following notation is used to represent asymptotic tight bound?

- A. Big Oh (O)
- B. Big Omega (Ω)
- C. Big Theta (θ)
- D. None of the above

Answer: C

Q. In a linear search algorithm, worst case occurs:

- A. If the key element is exist at first position in a collection/list.
- B. If the key element is exist at last position in a collection/list.
- C. If the key element does not exist in the list.
- D. If either the key element exist at last position or does not exist in the list.

Answer: D

Q. What is an asymptotic average case time complexity of a linear search algorithm?

- A. $O(n)$
- B. $O(n/2)$
- C. $\theta(n)$
- D. $\theta(n/2)$
- E. Both C & D

Answer: C

Q. There is a need of data structure in programming to achieve:

- A. Encapsulation
- B. Efficiency
- C. Polymorphism
- D. None of the above

Answer: B

Q. An average case time complexity of a binary search algorithm is:

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

Answer: D

Q. In a binary search algorithm worst case occurs

- A. if key is found at non-leaf position
- B. if key is found at leaf position
- C. if key is at root position
- D. if either key is found at leaf position or key does not exists.

Answer: D

Q. Binary Search algorithm is also called as

- A. Logarithmic Search
- B. Half-interval Search
- C. Exponential Search
- D. Both options 1 & 2
- E. None of the above

Answer: D

Q. What is an asymptotic lower bound for binary search algorithm?

- A. $O(\log n)$
- B. $\Omega(n)$
- C. $\theta(\log n)$
- D. $\Omega(\log n)$
- E. None of the above

Answer: E

best case time complexity (i.e. lower bound) = $\Omega(1)$