5 Lecture - CS502

Important Mcqs

1. Which of the following is a linear time sorting algorithm?

- a) Quick sort
- b) Merge sort
- c) Counting sort
- d) Selection sort

Answer: c) Counting sort

Which of the following is not a linear time sorting algorithm?

a) Bucket sort b) Radix sort c) Quick sort d) All of the above Answer: c) Quick sort

What is the worst-case time complexity of counting sort?

a) O(n)
b) O(n log n)
c) O(n^2)
d) It depends on the input
Answer: a) O(n)

Which of the following sorting algorithms is not comparison-based?

- a) Bucket sort
- b) Radix sort
- c) Quick sort
- d) All of the above
- Answer: d) All of the above

Which of the following is an advantage of linear time sorting algorithms?

- a) They have a faster runtime than comparison-based sorting algorithms.
- b) They work for all types of data.
- c) They have a lower memory usage than comparison-based sorting algorithms.

d) They are more accurate than comparison-based sorting algorithms.

Answer: a) They have a faster runtime than comparison-based sorting algorithms.

Which of the following sorting algorithms is based on dividing elements into buckets?

- a) Counting sort
- b) Radix sort
- c) Bucket sort
- d) Selection sort

Answer: c) Bucket sort

Which of the following sorting algorithms is based on comparing digits or characters? a) Counting sort b) Radix sort
c) Bucket sort
d) Selection sort
Answer: b) Radix sort

Which of the following sorting algorithms requires additional memory for the buckets?

- a) Counting sort
- b) Radix sort
- c) Bucket sort
- d) Selection sort

Answer: c) Bucket sort

Which of the following is an example of an input that counting sort cannot sort in linear time?

- a) An array of integers
- b) A string of characters
- c) A binary tree

d) A linked list

Answer: b) A string of characters

Which of the following is not a stable sorting algorithm?

- a) Counting sort
- b) Radix sort
- c) Bucket sort
- d) Selection sort
- Answer: d) Selection sort