# 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