Unit 2 Quiz

1. Which sorting algorithm works by repeatedly stepping through the list, compares adjacent elements, and swaps them if they are in the wrong order?

A) Bubble sort

B) Merge sort

C) Quick sort

D) Counting sort

2. Which sorting algorithm builds the sorted array one element at a time by repeatedly taking the next element from the unsorted part and inserting it into its correct position in the sorted part?

A) Insertion sort

B) Selection sort

C) Merge sort

D) Heap sort

3. What type of sort algorithm is Bubble sort?

A) Stable sort

B) In-place sort

C) External sort

D) Online sort

4. Which sorting algorithm divides the input list into two sublists, repeatedly sorts each sublist, and then merges them back together?

A) Insertion sort

B) Quick sort

C) Merge sort

D) Counting sort

5. Which sorting algorithm works by partitioning an array into two sub-arrays and then recursively sorting the sub-arrays?

A) Bubble sort

B) Quick sort

C) Selection sort

D) Heap sort

6. Which sorting algorithm is based on the divide-and-conquer approach?

A) Bubble sort

B) Insertion sort

C) Merge sort

D) Selection sort

7. Which sorting algorithm has the best average-case time complexity?

A) Bubble sort

B) Insertion sort

C) Merge sort

D) Selection sort

8. Which sorting algorithm has the worst-case time complexity of O(n^2)?

A) Quick sort

B) Merge sort

C) Bubble sort

D) Counting sort

9. Which sorting algorithm guarantees a worst-case time complexity of O(n log n)?

A) Bubble sort

B) Insertion sort

C) Merge sort

D) Selection sort

10. Which sorting algorithm is not suitable for large datasets due to its quadratic time complexity?

A) Merge sort

B) Quick sort

C) Insertion sort

D) Selection sort

11. Which sorting algorithm uses a divide-and-conquer strategy to sort elements?

A) Bubble sort

B) Insertion sort

C) Merge sort

D) Selection sort

12. Which sorting algorithm uses a pivot element to partition the array into smaller sub-arrays?

A) Bubble sort

B) Insertion sort

C) Quick sort

D) Selection sort

13. Which sorting algorithm is not a comparison-based sorting algorithm?

A) Bubble sort

B) Merge sort

C) Counting sort

D) Insertion sort

14. Which sorting algorithm has the best space complexity?

A) Bubble sort

B) Quick sort

C) Merge sort

D) Counting sort

15. Which sorting algorithm is known for its stability, making it useful when the original order of equal elements should be preserved?

A) Quick sort

B) Merge sort

C) Bubble sort

D) Insertion sort

16. Which sorting algorithm sorts elements by repeatedly moving the largest unsorted element to the end of the array?

A) Selection sort

B) Quick sort

C) Merge sort

D) Counting sort

17. Which sorting algorithm sorts elements by counting the number of occurrences of each unique element in the input array?

A) Bubble sort

B) Insertion sort

C) Selection sort

D) Counting sort

18. Which sorting algorithm sorts elements by dividing the input array into a sorted and an unsorted region?

A) Bubble sort

B) Merge sort

C) Insertion sort

D) Quick sort

19. Which sorting algorithm has the best average-case time complexity of O(n log n)?

A) Bubble sort

B) Quick sort

C) Counting sort

D) Merge sort

20. Which sorting algorithm is not an in-place sorting algorithm?

A) Quick sort

B) Selection sort

C) Merge sort

D) Insertion sort

21. Which sorting algorithm is highly efficient for datasets that are nearly sorted?

A) Quick sort

B) Bubble sort

C) Insertion sort

D) Merge sort

22. Which sorting algorithm requires extra space proportional to the range of input values?

A) Merge sort

B) Counting sort

C) Bubble sort

D) Quick sort

23. Which sorting algorithm does not have a worst-case time complexity dependent on the input distribution?

A) Quick sort

B) Bubble sort

C) Merge sort

D) Insertion sort

24. Which sorting algorithm does not make use of recursion?

A) Quick sort

B) Merge sort

C) Bubble sort

D) Insertion sort

25. Which sorting algorithm is not a comparison-based sorting algorithm?

A) Quick sort

B) Merge sort

C) Counting sort

D) Insertion sort

26. Which sorting algorithm is often used for sorting elements in external memory?

A) Merge sort

B) Quick sort

C) Bubble sort

D) Insertion sort

27. Which sorting algorithm has a worst-case time complexity of O(n log n) and best-case time complexity of O(n)?

A) Quick sort

B) Merge sort

C) Bubble sort

D) Insertion sort

28. Which sorting algorithm performs sorting by repeatedly selecting the minimum element from the unsorted portion and placing it at the beginning of the array?

A) Bubble sort

B) Selection sort

C) Merge sort

D) Insertion sort

29. Which sorting algorithm is not an efficient choice for small datasets due to its relatively high time complexity?

A) Merge sort

B) Bubble sort

C) Quick sort

D) Insertion sort

30. Which sorting algorithm is not stable?

A) Quick sort

B) Merge sort

C) Bubble sort

D) Selection sort