

## BLOCK SWAP ALGORITHM

1. What is the Block Swap Algorithm used for?

- Sorting a list of numbers in ascending order
- **Reversing the order of elements in an array**
- Shuffling the elements of an array randomly
- Finding the maximum element in an array

Ans: Reversing the order of elements in an array

2. How does the Block Swap Algorithm work?

- It selects a pivot element and partitions the array into two parts
- **It swaps two blocks of elements within an array**
- It compares adjacent elements and swaps them if they are in the wrong order
- It recursively divides the array into smaller subarrays and merges them back in order

Ans: It swaps two blocks of elements within an array

3. What is the time complexity of the Block Swap Algorithm?

- $O(1)$
- $O(\log n)$
- **$O(n)$**
- $O(n^2)$

Ans:  $O(n)$

4. How many elements are swapped in each iteration of the Block Swap Algorithm

- One element
- Two elements
- **A block of elements**
- All elements in the array

Ans: A block of elements

5. What is the significance of the block size in the Block Swap Algorithm?

- It determines the number of iterations required to reverse the array
- It affects the space complexity of the algorithm
- **It determines the maximum number of elements that can be reversed at once**
- It has no impact on the algorithm's performance

Ans: It determines the maximum number of elements that can be reversed at once

6. In the Block Swap Algorithm, what happens if the block size is larger than the array size?

- The algorithm fails and produces incorrect results
- The algorithm adjusts the block size to match the array size
- **The algorithm ignores the excess elements beyond the array size**
- The algorithm terminates with an error message

Ans: The algorithm ignores the excess elements beyond the array size

7. Which of the following statements about the Block Swap Algorithm is true?

- It requires additional auxiliary space to store intermediate results
- It is a comparison-based sorting algorithm
- It works only on arrays with even lengths
- **It is an in-place algorithm that operates directly on the input array**

Ans: It is an in-place algorithm that operates directly on the input array

8. What is the minimum number of iterations required to reverse an array using the Block Swap Algorithm?

- 1
- 2
- 3
- It depends on the size of the array

Ans: 2

9. Can the Block Swap Algorithm be used to reverse a subarray within an array?

- **Yes, by specifying the start and end indices of the subarray**
- No, the algorithm can only reverse the entire array
- It depends on the elements present in the subarray
- It depends on the programming language used

Ans: Yes, by specifying the start and end indices of the subarray

10. Which of the following is a potential drawback of the Block Swap Algorithm?

- It has a high space complexity
- **It is not suitable for large arrays**
- It requires prior knowledge of the array's structure
- It has a time complexity of  $O(n^2)$

Ans: It is not suitable for large arrays