

**UNIVERSITY OF GHANA**

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**Course Code and Title:** CPEN 204 Data Structures and Algorithms

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**ASSIGNMENT 1**

**Question 1**

To determine the median of the array, the following algorithm can be implemented:

1. Sort the array in ascending order.
2. If the length of the array is odd, return the middle element.
3. If the length of the array is even, return the average of the two middle elements.

**Question 2**

|  | **Circular Array** | **Linked List** |
| --- | --- | --- |
| Memory Allocation | Contiguous block of memory | Dynamically allocated nodes |
| Random Access | O(1) | O(n) |
| Insertion/Deletion | O(n) | O(1) |
| Size Flexibility | Fixed size, requires resizing for more elements | Dynamic size, nodes can be added or removed easily |