20. Sort the array so that whenever nums[i] is odd, i is odd, and whenever nums[i] is even, i is even. Return any answer array that satisfies this condition.

PROGRAM:

```
def sort_parity(nums):
    even_nums = sorted([x for x in nums if x % 2 == 0])
    odd_nums = sorted([x for x in nums if x % 2 != 0])

    result = []
    for i in range(len(nums)):
        if i % 2 == 0:
            result.append(even_nums[i // 2])
        else:
            result.append(odd_nums[i // 2])

    return result

nums = [3, 1, 4, 2, 5, 6]
sorted_nums = sort_parity(nums)
print("Sorted array with even indices having even numbers and odd indices having odd numbers:", sorted_nums)
```

OUTPUT:

```
Sorted array with even indices having even
    numbers and odd indices having odd numbers
    : [2, 1, 4, 3, 6, 5]
```

TIME COMPLEXITY: O(n log n)