

# Final Exam

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| **Instructor:** | **ALBERT DANISON** |
| **Class:** | **MAD6135** |

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| * Read all questions carefully. * Partial marks can be awarded. * Time allowed: 120 minutes * Total marks: 80 |

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| Q1 |  | /10 |
| Q2 |  | /10 |
| Q3 |  | /10 |
| Q4 |  | /10 |
| Q5 |  | /10 |
| Q6 |  | /10 |
| Q7 |  | /10 |
| Q8 |  | /10 |
| Total |  | /80 |

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| **Date:** | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Student name:** |  |
| **Student number:** |  |

## How to check if an object is an array or not? Provide an example.(10 marks).

1. Implement enqueue and dequeue in JavaScript using only two stacks. *Enqueue* means to add an element, *dequeue* to remove an element. (10 marks)
2. Write a function doBase(N)that would allow you to do this. (10 marks)

var add6 = doBase(6);

add6(10); // returns 16

add6(21); // returns 27

1. Given two strings, return true if they are anagrams of one another and false if they are not. (10 marks)

For example: Mary is an anagram of Army.

1. Create a function that takes two numbers and a mathematical operator **+ - \* /** ^ and will return the result based on the given numbers and chosen operation. (20 marks)

Examples:

calculator(2, "+", 2) ➞ 4

calculator(2, "\*", 2) ➞ 4

calculator(4, "/", 2) ➞ 2

calculator(4, "-", -5) ➞ -1

calculator(4, "^", 2) ➞ 16

Note:

If the input tries to divide by 0, return: "Can't divide by 0!"

1. How are Maps and Sets implemented in JavaScript? Provide a practical example of their use in JavaScript. (10 marks)
2. What is the role of Iterators and Generators in JavaScript. Provide an example of each. (10 marks)
3. How is Asynchronous Programming implemented in JavaScript? Provide an example. (10 marks)