CS472 WAP Midterm Exam Preparation Guide

Saturday 10 March, V47A – 10:00 AM

You should be able to finish the exam and answer all questions in 2.5 hours,
If you feel like you need more time, come early as the exam room will be open at 9:45 AM

This exam is contributing 40% of your final grade.

The exam will be divided as the following:

1. Internet questions
2. JS True/False questions
3. Short answer questions JS, CSS selectors and HTML
4. Layout questions
    a. Positioning your layout (static, absolute, relative, fixed)
    b. Display (inline, block, inline-block, none)
    c. Floating and how we implement it (left, right)
    d. Position layouts and Floating layouts
    e. CSS hacks to fix layout
5. Regular expression questions
6. You will be given a block of code and you have to write the output
7. Short programming fixes
8. Two main programming questions (Module pattern + Inheritance + JS API)

Read every question carefully, some questions are asking only for an output, other questions will be asking for a short code. There are also questions where explanation is needed (Explain why)! Some questions require a combination of all the above.

Short answer questions are provided with a limited space. When one line is provided, that means that your answer should be a few words and not exceed that one line. When two lines are provided, that means that your answer could be one line or two, but should not exceed two lines. If your answer exceeds the given space, even if your answer was 100% correct the answer will be ignored and you won't receive any credit. When you feel like you need to explain something with two lines while only one is given, then you must rephrase your answer and choose the most important answer that fits within one line. However, short answers that don't imply a correct answer will not be considered.

NO cheat sheet is allowed for this exam (you will be given all the functions syntax with the exam questions, a full page of printed functions will be added at the end of your exam papers).

Answers are preferred be written with a Pen and not Pencil, if you need to write your answers using a pencil, you should bring your own sharpener and eraser, no stationary borrowing is allowed.

All mobile phones should be turned off and submitted to the front/back area at the beginning of the exam.

Please get ready and use the washroom before the exam as NO ONE will be allowed to leave the exam room before completely turning in their papers.

No extra papers are allowed other than your exam papers. Exam papers should stay stapled together all the time. If you need extra space, you may use the back of the papers or any blank space you find. Let's help each other save the environment.

There is no tolerance policy for exams. Despite the fact that our quizzes are solved in a friendly atmosphere, exams are not. Once you are caught cheating or trying to cheat, you will be asked to leave the exam room immediately without a warning.

Be a professional and show up on time.

To answer all exam questions you should be familiar with the following topics:

- Explain the basics of the request and response along with all the protocols and layers of the Internet (WWW, HTTP, TCP, IP, Ports, DNS, Error codes.. etc).
- Explain all HTML tags and attributes of HTML5 and how to write a valid code.
- Understand all CSS selectors, child selectors, grouping, classes and IDs, pseudo elements and classes, Inheritance.
- Understand the Box Model.
- Understand the difference and similarities between block and inline element.
- Understand the margin merge trick between floated elements.
- Understand CSS floating and how they work on block elements.
- Understand all the CSS tricks to overcome the problems we face when floating.
- Understand CSS position property.
- Be able to build a layout from scratch.
- Be comfortable with CSS variables.
- Be able to build a layout using CSS Grid.
- Understand the usage of display and visibility CSS properties.

- Understand the CSS way of building a photo gallery.
- Be able to build a valid HTML5 navigation from unordered list using CSS.
- Understand the difference between relative and absolute path.
- Be able to build a valid HTML5 Form and understand the difference between POST and GET.
- Be able to write validation rules in HTML5 forms using Regular Expressions.
- JavaScript global objects
- Writing unobtrusive JavaScript code (How is unobtrusive styling done in JS?)
- What are the JS types and why is it called 'loosely-typed' and how auto conversion works?
- How do you declare variables? Differences between var, let and const.
- What if a variable is used without declaring it?
- Understand the difference of null and undefined?
- Understand the difference of == and ===?
- What values are truthy and falsey?
- Why having semi-colon is important at some cases.
- What is an anonymous functions and how we use them in JS?
- Understand the distinction between declaring a function and invoking a function?
- Understand the difference between function statement and function expression?
- How do you set a CSS style property using the JS/DOM?
- Understand exactly when and how and when does JS code run?
- Understand the window.onload event and how is it involved in writing unobtrusive JS?
- What are setTimeout and setInterval? How we use them?
- Callback functions and how they are queued in the event loop in browser.
- JS Scope, how we define variables in scope and how we create new scope.
- Understand closure and free variable?
- How we fix the closure problem.
- What is hoisting?
- call(), apply() and bind() to solve Objects borrowing and currying problems.
- What are objects? How do we create an object? How we use "this" inside them? how do we implement prototype inheritance with Objects? How is Object.create(…) used?

- Understand the module pattern IIFE and how is it used to avoid globals?
- Understand the 'this' keyword and what does it refer to in all different places of JS code?
- How can we create an encapsulated objects with public/private variables and methods using closures?
- What is a function constructor? how it's used to create new objects? How do we extend its functionality to all the objects and save memory?
- Understand the JS prototype property? How we use it? why we use it?
- Understand the terminology difference between a function and a method?
- Understand the terminology difference between the" jQuery function" and the "jQuery object"?
- What are the 4 overloaded signatures of the jQuery function, and what is the purpose of each?
- Understand looping over DOM elements using .each()
- Set/get DOM style properties and style classes using jQuery .css()
- Understand how and when jQuery chaining works?
- Event handlers (JS/jQuery) assign, calls, bubbling.
- Using Geolocation object and finding users's position
- Using LocalStorage and SessionStorage objects to save information in browsers

Please write your answers with **clear hand writing** and **clear English language**. If I don't understand your hand writing, you might receive the big o notation.

Study well and good luck.