UNIVERSITY OF TORONTO
Faculty of Arts and Science

DECEMBER 2015 EXAMINATIONS

CSC309H1 F - Programming on the Web
Instructor: Ahmed Shah Mashiyat

Duration – 2 hours
No Aid Allowed, Pass Mark: 14 out of 35

This exam is worth 35% of your final mark. You must get at least 14 out of 35 in this final exam to pass this course. Please answer *all* questions in the space provided. If you require additional space, please use the back of the page and indicate with an arrow that you have done so. For those questions that involve writing code, demonstrating a clear understanding of the concepts is important, but you should also make an effort to write clean and valid code. **Good luck!**

Last Name	
First Name	
Student Number	

Marks

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total
1.5	2	7	5	1.5	6	2	2	3	5	35

Q1.- [1.5 points] Mention three ways to include CSS to your page. Which approach is better? Mention two reasons.

Q2.- [2 points] Use Media Queries to apply the following CSS rules to devices with *media only screen* and a max device width of 480px.

```
div#wrapper{width=400px;}
div#header{height=90px; position:relative;}
#content{float:none; width:100%;}
```

Q3.- [7 points] Complete the script in the box to create a web page that draws the shape shown in figure 1, every time the user clicks with the mouse on the canvas. The new copy of the figure should be centered in the position where the user clicked the mouse. You should ensure that there is no overlapping of the figures, i.e., you should skip drawing if there is already a figure drawn within the perimeter of the clicked position. Figure 2 shows Javascript code that draws the figure. Use this function in your solution. Finally, Figures 3 and 4 show the page after the user has clicked 1 and 5 times on the canvas, respectively.

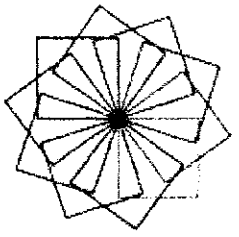


Figure 1

```
function drawCoolShape(context) {
        var copies = 10;
        context.beginPath();
        for (var i=0; i<copies; i++) {
          context.rotate(2* Math.PI/copies);
          context.rect(0, 0, 20, 20);
        }
        context.stroke();
}
```

Figure 2

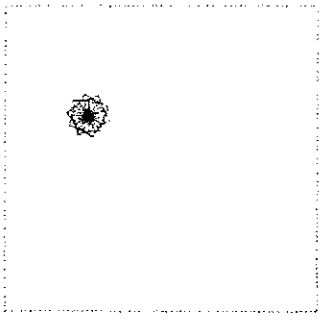


Figure 3

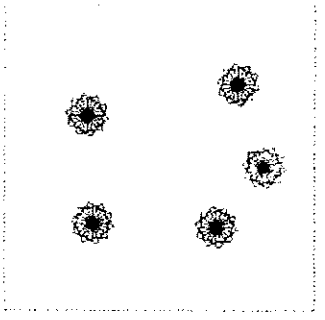
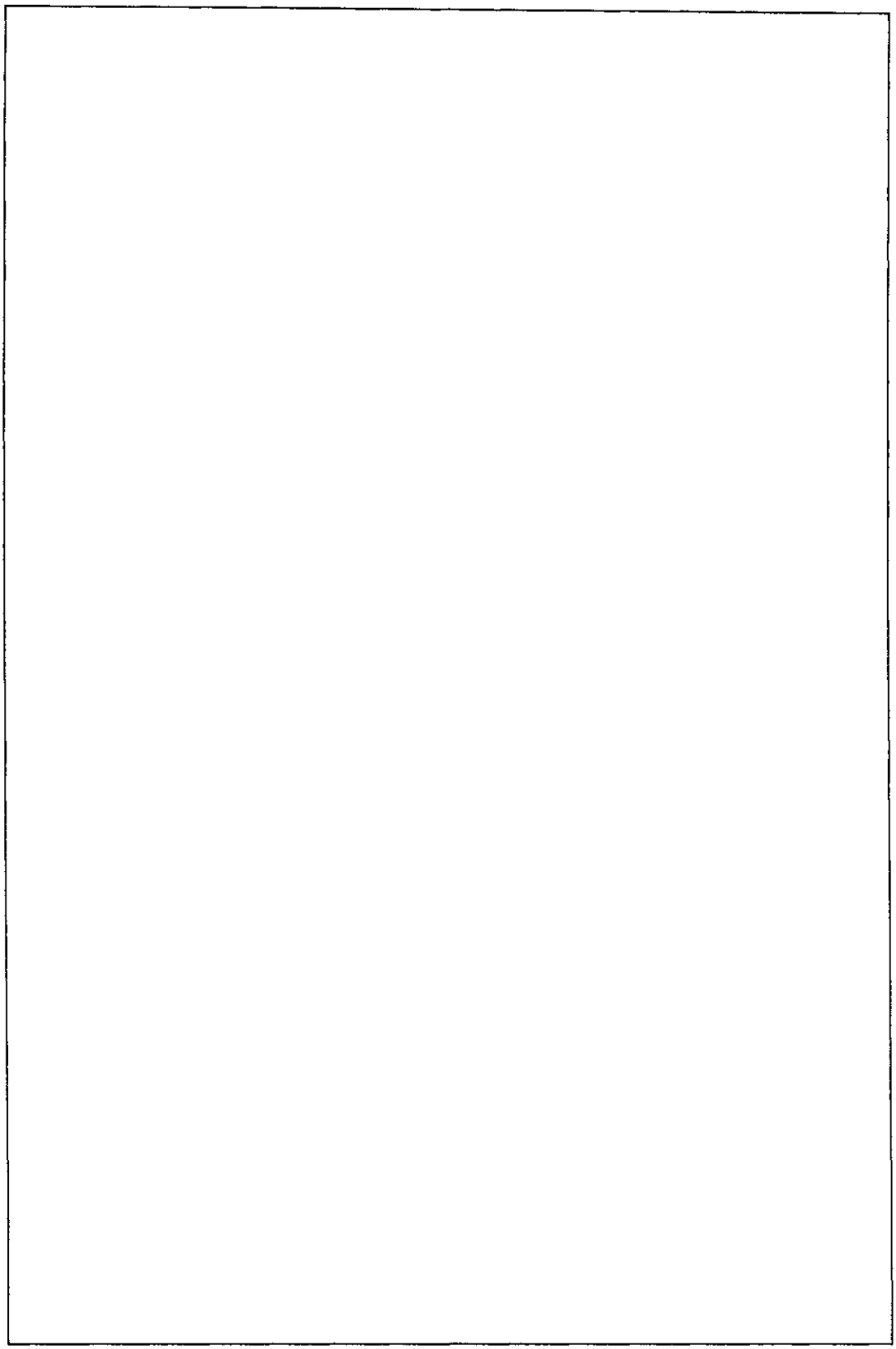


Figure 4

```
<!DOCTYPE html>
<html lang="en">
<head>
 <script src="http://code.jquery.com/jquery-latest.js"></script>
 <style>
 canvas {border: 1px dashed black;}
 </style>
 <script>
 //Your code goes here
```

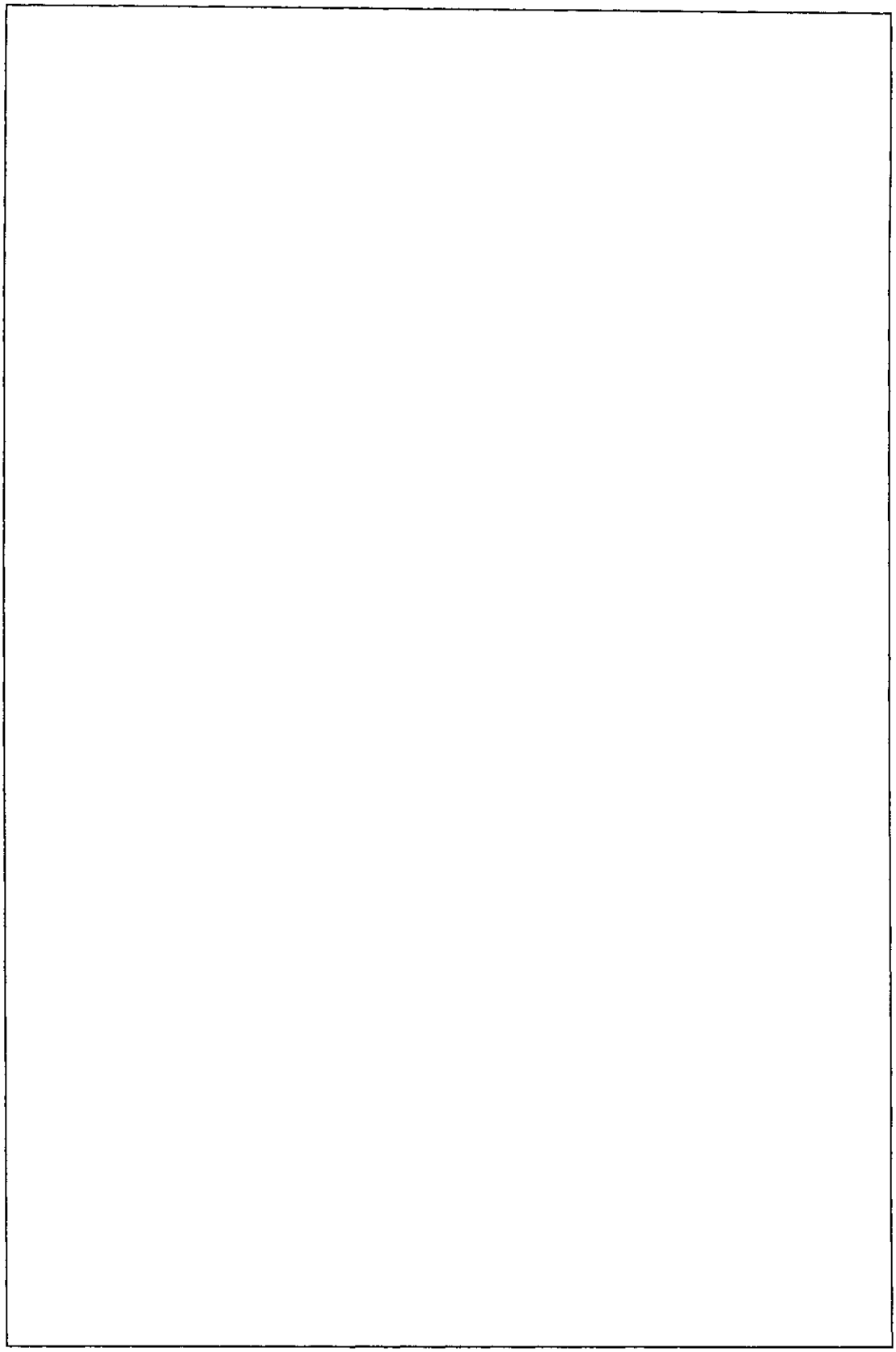


```
</script>
</head>
<body>
 <canvas id="drawingCanvas" width="400" height="400"></canvas>
</body>
</html>
```

Q4.- [5 points] Given the following JSON response:

```
{
        "response": {
                "slug": "the-robotic-animal-sculptures-of-savanna",
                "type": "photo",
                "photos": [{
                        "label": "elephant",
                        "url": "cuyo1_1280.jpg"
                }, {
                        "label": "lion",
                        "url": "cuyo1_500.jpg"
                }, {
                        "label": "crane",
                        "url": "cuyo1_250.jpg"
                }, {
                        "label": "jiraffe",
                        "url": "cuyo1_75sq.jpg"
                }]
        }
}
```

Write the necessary javascript code to find and render ALL the images in a HTML table layout. You can assume the jQuery library is available.



Q5.- [1.5 points] Should we do client side validations even if we already did server side validations? Give two reasons for your answer.

Q6.- [6 points] Imagine there is a system that is used by a Pizza restaurant to accept delivery requests via an API. The system should allow new orders to be placed for delivery at a given address, update the order with additional pizzas/toppings, check for the status of currents orders or cancel existing orders.

a. [3 points] Describe the structure of a REST API that would allow clients to access all these functions via the web. You do NOT need to implement the API, only design the API. Follow best practices.

b) [3 points] Describe the sequence of HTTP Requests that would be required to place a new order to be delivered to "40 St. George", including one meat pizza and one veggie pizza. Also check the status of the order and since we won't have time to eat it during the exam, cancel as well.

Q7.- [2 points] Since MongoDB do not use SQL, is it possible to do Injection attack when you are using MongoDB? Explain your answer.

Q8.- [2 points] Give a one-sentence definition of the following four terms:

OTP:

Steganography:

Access Control List:

Content Delivery Network:

Q9.- [3 points] Why performance may improve if we set image dimension before loading? what is Gzip components? Explain.

Q10.- [5 points] Please clearly write your answer in the empty cell as TRUE or FALSE.
Marking scheme:

- +1: for correct answer
- -1: for incorrect answer
- 0: for not answering

The minimum mark for this assignment is 0 (never below).

1		AngularJS supports two-way data binding.
2		By default, Mocha will run `UnitTest.js` file in the root folder.
3		To support asynchronous callbacks nodeJS event loop use multithreading.
4		Using javascript history object we can redirect users to a site where user have visited before.
5		We can use secret token to eliminate XSRF attack.

(Scratch paper)