Question 1

1 pts

Which one of the below can the Selenium package be used for?

- ○ Hosting a git repository
- ○ Can only get the DOM before the DOM is modified by javascript.
- ○ Hosting a website online.
- ○ Can get the DOM before AND after the DOM is modified by javascript.

Question 2

0.5 pts

When the python code below is run on the given HTML, is an exception raised?

```
<!DOCTYPE html>
<html>
<body>

<h3>HTML for one of the exam questions</h3>
<p>Some paragraph text.</p>

</body>
</html>
```

```
btn = b.find_element("id", "BTN_ID")
btn.click()
```

- ○ YES, an exception is raised.
- ○ NO, no exception is raised.

Question 3

1 pts

What does a webdriver do? Select all that are true.

- ☐ Allows us to avoid writing code for every web browser that we want to use with our Selenium code.
- ☐ Drives web traffic to our website
- ☐ Allows us to host a website on our local computer, for example, at the URL http://127.0.0.1:5000/
- ☐ Allows us to access elements within a web browser, for example, by using the <webdriver object name>.find_element("id", <element name>) method.

Question 4 — 1 pts

What is the port on the following request, and what does a port do?

18.216.110.65:5000/2024.html

- ○ 5000; The port is a numeric identifier for a computer (or network card on computer)
- ○ 5000; The port is a numeric identifier used to route to specific process on computer
- ○ 2024; The port is a numeric identifier used to route to specific process on computer
- ○ 2024; The port is a numeric identifier for a computer (or network card on computer)

Question 5 — 1 pts

Which of the following is an example of A/B testing?

- ○ Randomly splitting zoo visitors into 2 tour groups with different treatments, a treatment and a control group, and evaluating whether the park made more $ with two groups rather than 1 group.
- ○ Randomly splitting zoo visitors into 2 tour groups with different treatments, and evaluating whether the park made more $ with two groups rather than 1 group.
- ○ Randomly splitting zoo visitors into 3 tour groups, each with different treatments, calculating interest and $ spending metrics for each group after the tour, and then comparing them.
- ○ Randomly splitting zoo visitors into 2 tour groups, a treatment and a control group, calculating interest and $ spending metrics for each group after the tour, and then comparing them.

Question 6 — 1 pts

```
import re
```

my_question_str = "After the CS 320 exam, I will know how to use regular expressions in python 3 code!"

What is returned when the following python code is run?

```
re.sub(r"\d+", "exam", my_question_str)
```

- ○ 'After the CS exam exam, I will know how to use regular expressions in python exam code!'
- ○ 'After the CS 320 \d+, I will know how to use regular expressions in python 3 code!'
- ○ 1
- ○ “exam”

Question 7 — 1 pts

Using regular expressions, which of the below will have at least one match with `r"[B]"`? Select all that are true.

- ☐ "B"
- ☐ "AB"
- ☐ "^B"
- ☐ "AA"

Question 8

0.5 pts

```
import re
```

Which of the following does **NOT** return an empty list?

- ○ re.findall(r"HA+H", "HH")
- ○ re.findall(r"HA+?H", "HH")
- ○ re.findall(r"HA?H", "HH")

Question 9

1 pts

For the below python code, how would you access the webpage that shows the text “two”?

```
@app.route("/first")
def first():
    return "one"


@app.route("/")
def third():
    return "two"
```

- ○ http://127.0.0.1:5000/index
- ○ http://127.0.0.1:5000/index.html
- ○ http://127.0.0.1:5000/first
- ○ http://127.0.0.1:5000/

Question 10

0.5 pts

Suppose the total number of visits to a website with A/B testing is fixed at 200. For which of the following situations is the p-value most likely to be lower than significance threshold?

- ○ 100 clicks on A, 100 clicks on B
- ○ 75 clicks on A, 125 clicks on B
- ○ 125 clicks on A, 75 clicks on B
- ○ 200 clicks on A, 0 clicks on B

Question 11

1 pts

For the below A/B testing metrics table, how many B impressions were there? And what is the C.T.R. of B?

	Click	No-Click
A	75	15
B	25	5

- ○ Impressions = 25; CTR = 0.625
- ○ Impressions = 30; CTR = 0.83333...
- ○ Impressions = 100; CTR = 0.25
- ○ Impressions = 5; CTR = 0.06666...

Question 12

0.5 pts

True or False: When analyzing one contingency tables from an A/B test, scipy.stats.fisher_exact(df) returns 0.05 for table 1. At a threshold for significance of 10 percent, we have statistically significant evidence that B has a different click-through-rate than A.

- ○ True
- ○ False

Question 13

0.5 pts

From our lectures and reading, what is SVG?

- ○ A common image format used on the web.
- ○ A format for saving text data.
- ○ A common metric used in A/B testing.
- ○ An A/B testing structure.

Question 14

0.5 pts

To correctly compute area of geographic polygons, which of the following should be the axis units of the Coordinate Reference System?

- ○ transData
- ○ transAxes
- ○ transFigure
- ○ meters

Question 15

1 pts

For the following Flask code, what is displayed on the page when the user goes to the following URL: `http://127.0.0.1:5000/disp?x=300&y=20`

```
@app.route("/disp")
def display_variables():
    html = f"<html><body> x is {float(request.args['x'])} and y is {float(request.args['y'])}</body></html>"
    return html
```

- ○ x is 20.0 and y is 300.0
- ○ x is 300.0 and y is 300.0
- ○ x is None and y is None
- ○ x is 300.0 and y is 20.0

Question 16

1 pts

Given the string "My mobile number is not 123-456-7890", which of the following regular expressions will match "123-456-7890"?

- ○ \d{4}-\d{3}-\d{3}
- ○ \d{2}-\d{3}-\d{4}
- ○ \d{3}-\d{3}-\d{4}
- ○ \D{3}-\D{3}-\D{4}

Question 17

1 pts

```
import matplotlib.pyplot as plt

fig, (ax1, ax2) = plt.subplots(ncols=2, figsize=(6, 4))
x1, y1 = ax1.transData.transform((0.2, 0.2))
x2, y2 = ax2.transData.transform((2, 0.5))
arrow = plt.Line2D((x1, x2), (y1, y2), transform=None)
???.add_artist(arrow)
```

To draw a line that spans across ax1 and ax2, we should invoke add artist using which of the following object instances, that is, with what should we replace ??? in `???.add_artist(arrow)`?

- ○ ax1
- ○ ax2
- ○ fig
- ○ ax1-ax2