

Key for Purple Exam

1. The point at which indexing begins is known as its:

- A. Origin**
- B. Base
- C. Increment
- D. Start

2. Consider the following code:

```
var yell="Woo-Hoo";  
  
for (i=1; i<5; i=i+2)  
{  
    yell = yell + "-Hoo";  
}  
yell = yell + "!";  
  
document.write(yell);
```

A. How many times, if any, will the loop run? Explain why for full credit.

2 times. The first check of the loops condition, i is 1 so the loop runs. The second check i is 3, so the loop runs again. The third check, i is 5, so the condition is false and the loop doesn't run.

B. What prints at the end of the code shown?

Woo-Hoo-Hoo-Hoo!

3. _____ can include none, one or many _____.

Choose and circle the best answer pair from below.

- A. Arguments :: outputs
- B. Parameters :: values
- C. Functions :: parameters**
- D. Variables :: inputs

4. [5] Using the selections given, place the letter under the code next to the term that correctly identifies what it is. Not all answers will be used.

```
<html>
<head><title>Conversion Tables</title>
<script type = "text/javascript">
```

```
    A      B
    function convertC2F(tempInC)
    {
        //convert to fahrenheit
        var tempInF;
        tempInF = (9/5)*tempInC + 32;
        return tempInF;
    }
```

E

```
document.bgColor = "pink";
```

```
//this break is only here to make room for the box
```

```
document.write("<H2>Table of Celsius – Fahrenheit Equivalentents </H2>");
```

```
document.write("<table><th>C </th> <th> H </th>");
document.write("<tr><td>-10 </td> <td>" + convertC2F(-10) + " </td> </tr>");
```

```
document.write("<tr><td>20 </td> <td>" + convertC2F(20) + " </td> </tr>");
```

```
document.write("</table>");
```

```
</script>
```

- I** argument
- D** parameter
- B** value
- A** attribute
- F** property
- G** method
- J** object
- H** function call
- C** function name
- E** function declaration
- function definition
- send result to point of call

[6 points]

Read the following paragraph. Imagine that you are thinking of writing a program for the situation listed below. Identify the programming concepts found in the story. DO NOT WRITE CODE!!! Just indicate the part of the story that is an example of the concept.

5. The Bus Driver

A bus comes to one of the stops on its route. There are 50 people waiting, of all different ages. Riding the bus costs \$1 if you are 18 or over and .50 cents for passengers under 18 (but any passenger also under the age of 2 rides free). The bus driver never leaves behind a single passenger and will not pull away as long as people are waiting to board. Of course, if they don't have the bus fare, the driver will kick them off and go on to the next person. At the end of the day, the driver writes down on a piece of paper the amount of money collected from fares to turn in to the central base. The amount of money should be the equivalent of all the fares of the 18 and over passengers plus the fares of the under 18 passengers (those under 2 aren't counted).

- Identify what in the story could be an example of a **variable** and explain why:

-fare OR

-piece of paper at end of day that holds the total money taken in

Each contains values that can be changed

- Identify what in the story could be an example of a **conditional** and explain why:

-Paying certain fare depending on age of the rider. If they are 18 and above, the fare becomes \$1, but if they are under 18 and older than 2 the fare is .50, otherwise the fare is 0

- Identify what in the story could be an example of **iteration** and explain why:

-collecting fares while people are waiting is an action repeated. When nobody is left, then the condition is false and the driver moves on.

- Identify what in the story could be an example of **assignment** and explain why:

-Fare changes depending on person's age

- value on piece of paper changes each day

- Identify what in the story could be an example of an **expression** and explain why:

-total amount of money is adult fares plus juvenile fares

- Identify what in the story could be an example of an **array** and explain why:

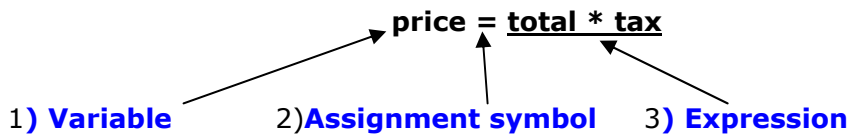
-collection of 50+ people. They can all be referenced under a single name and id'd by index.

6. What is the difference between a value and a variable?

variables are locations/containers and values are the data/stuff actually stored in those locations/containers

[3 points]

7. Name the 3 components of an assignment statement. Circle the example of each and place an arrow to the term. Be exact! Vague circles and arrows will be marked off.



8. Look at the code below (assume it sits in the correct location in an HTML document):

```
<script type="text/javascript">
function Suess (fish1, fish2) {
    var fishes;
    fishes = "One fish, two fish " + fish2 + " fish, " + fish1 + "fish!"
    return fishes;
}
</script>
<!--somewhere in the HTML Document -->
..... document.write (Suess("red", "blue"));
.....
```

What is written to the document at this point?

One fish, two fish blue fish, red fish!

9. Which of the following are legal assignment statements in JavaScript. Circle all that apply.

- A. 2 = num + 1;
- B. zero = "zero";**
- C. "zero" = zero;
- D. zero = 0;**
- E. zero + num = 1;

10. Why are **else**, **return** and **Boolean** not good names for functions or parameters?

Reserved words in JavaScript with preset meanings not to be changed.

11. Global variables (circle all that apply):

A. Are declared inside of functions

B. Can have their values changed from anywhere in the program

C. Are a way to get input to a function

D. Can only be changed inside functions

12. Expressions consist of operators and operands. Give an example of each of the following types of operators and say what it does:

Only need one of each kind for answer

Relational/Comparison Operator

a<b a less than b is true

a>b a greater than b is true

a<=b a less than or equal to b is true

a>=b a greater than or equal to b is true

a==b a matches b is true

a!=b a doesn't match b is true

Logical Operator

a<b && b<c True if a is less than b AND b is less than c

a<b || b<c True if either a is less than b OR b is less than c

13. Using the **while** iteration, create a loop that will print from 900 down to 0 by 3s
Example: 900,897,894....etc.

```
var num = 900;
```

```
while (num>=0)
```

```
{
```

```
  document.write(num);
```

```
  num = num-3;
```

```
}
```

14. In this JavaScript statement:

```
if (num1 == num2){  
  account = "balanced"  
}
```

A. A function

B. A condition

How is this part:

```
num1 == num2
```

C. An equation

D. A declaration

best described? Pick one→

E. An assignment

15. 400 students have signed up for ARCH200 next quarter. The professor has a list on the computer which is sorted by student last name. He wants to write a program find out if the student with the last name "Kutzark" is registered.

a) Using Linear Search what is the most students the program checks? **399 or 400**

b) Using Binary Search, what is the most students the program checks? **9 or 10**

Space for calculations (show your work!)[In both cases, the answer can be approximate: off by 1 is OK.]

(dividing 400 by 2 until the remainder is ~1)

[3 points]

16. You are helping to write out the code for the George Bush electronic voting program. Your job is to write the function that tallies votes for each party. This function will be integrated into a larger program and called when needed. Give your function a name that describes what it does.

Assume that there are 2 global variables, DemoTally and Reputally. There is a text box named "party" on a form named "vote" where a voter enters in their part affiliation.

They have three choices: "Democrat", "Republican" or "Independent".

Write a function that will add 4 to the Reputally if the text box shows "Republican", add 3 to DemoTally if the text box holds "Democrat" and add 2 to Reputally if the box shows "Independent".

```
function AddVotes()  
{  
    if (document.vote.party.value== "Republican")  
        {  
            Reputally = Reputally +4;  
        }  
    else if (document.vote.party.value== "Democrat")  
        {  
            DemoTally = DemoTally +3;  
        }  
    else if (document.vote.party.value== "Independent")  
        {  
            Reputally = Reputally +2;  
        }  
}
```

17. Look at the following code for calculating a person's Body Mass Index in metric units. What index is printed to the page? SHOW YOUR WORK

```
<HTML><HEAD>
<script type="text/javascript">
<!--
  function bmiM ( weightKg, heightM )
    {
      return weightKg / (heightM * heightM);
    }
  //-->
</script>
</HEAD>
<BODY>
<script type="text/javascript">
<!--
  document.write(bmiM(60, 2))
  //-->
</script></BODY></HTML>
```

60 maps to weightKg and 2 maps to heightM so what is returned is the result of:
60 / 2*2

Answer
15

EXTRA CREDIT: (2 points each, total of 4 points)

1. Declare an array called **wines** with 3 elements. Initialize the array with these values:

"Riesling"
"Merlot"
"Pinot Noir"

```
var wines = new Array(3);
wines[0] = "Riesling";
wines[1] = "Merlot";
wines[2] = "Pinot Noir";
```

2. In the context of Value Sensitive Design research, what does "informed consent" actually mean?

That information is disclosed, that they can understand its meaning, that they are not coerced and consent is voluntary.

(Need at least 2 for one point, 3 for 2 points)