AP Computer Science A Unit 10 Quiz

1. Which of the following answer choices beneath this question accurately describes a recursive method?

    A. A programming language in Java.

    B. A method that turns every value of a variable into 90.

    C. Recursive method is a method, which calls itself.

    D. None of the above

2. How many percent of the AP Computer Science A exam will feature materials from Unit 10?

    A. 25 percent

    B. 39 percent

    C. 50 percent

    D. 5-7.5 percent

3. What is base case?

    A. A war in Russia

    B. A programming language

    C. A way to end recursive calls

    D. None of the above

4. Which of the following materials will not be covered in Unit 10 of AP Computer Science A?

    A. Superclass

    B. Both A and C

    C. Java

    D. Recursive Method
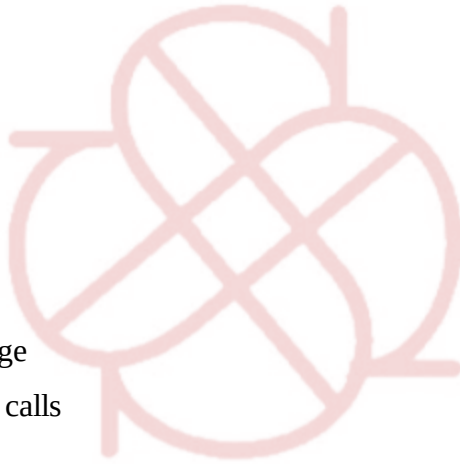
5. Which of the following sorts are the quickest most of the time?

  A. Merge Sort

  B. Insertion Sort

  C. Selection Sort

  D. None of the above

6. What are the main parts of recursive code?

  A. Recursive part

  B. Base case

  C. Both A and B

  D. Java

7. Which of the following answer choices below this question correctly describes the process of merge sort?

  A. The merge sort just turns every primitive value into true.

  B. The merge sort adds everything by one to every int and double.

  C. None of the other answer choices

  D. Merge sorts sorts an array, by first dividing a list into parts, then merging back together in the right order.

8.Can a binary search be written with a loop or with a recursive function?

  A. Only a loop

  B. Only a recursive function

  C. Both

  D. Neither of them

```
public static int m(int n)
{
  if(n == 0)
  {
    return 3;
  }
  else
  {
    return 3 * m(n - 1);
  }
}
```

9. What will be the output after the code below this question runs?

   System.out.print(m(0));

   A. 0

   B. 1

   C. 2

   D. 3

10. What will be the output of this code after the code beneath the question runs?

   System.out.print(m(1));

   A. 3

   B. 9

   C. 7

   D. 6

11. What will be the output of the following code below this question after it runs?

  System.out.print(m(2));

    A. 27

    B. 20

    C. 39

    D. 999

12. Which of the following answer choices below this question accurately describes the function of call stack?

    A. A way to actually end recursive calls

    B. Recursion

    C. While the code is running, call stack keeps track of the methods that are called.

    D. None of the above

13. What is wrong with the method below this question?

```
  public static int ma(int na)
{
  if(na == 1)
  {
    return 2;
  }
  else
  {
    return 5 + ma(na - 1)
  }
}
```

    A. No semicolon after return 5 + ma(na - 1)

    B. It wasn't a static method.

    C. It was a coding language

    D. There are no errors.

14. A recursive method should have at least how many ways to end the recursion?

        A. 1

        B. 2

        C. 3

        D. 4

Questions 15 and 16 refers to the method below:

```
    public static int mad(int naa)
{
  if(naa == 1)
  {
    return 55;
  }
  else
  {
    return 5 + mad(naa - 2)
  }
}
```

15. What is wrong with the method above this question?

    A. No semicolon after return 5 + mad(naa - 2)

    B. Recursive call is way too confusing.

    C. There are no errors.
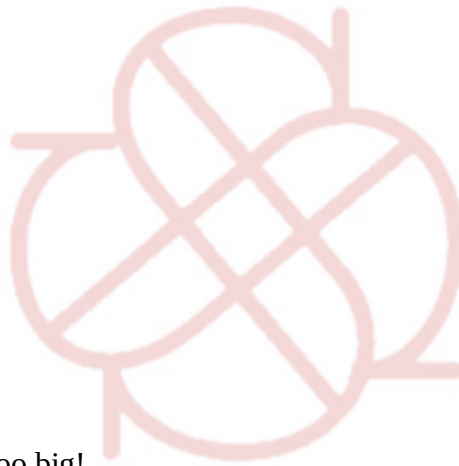
    D. None of the above.

16. How do we fix the error?

    A. Add a semicolon after return 5 + mad(naa - 2)

    B. Make it less confusing

    C. Make it more confusing

    D. There aren't any errors.

17. How many AP Computer Science A multiple choice questions will feature materials from Unit 10?

    A. 2-3 multiple choice

    B. 1 multiple choice question

    C. 5 multiple choice

    D. 10 multiple choice questions

18. What is wrong with the method below this question?

```
public static int a(int m)
{
  if(m == 1)
  {
    return 5;
  }
  else
  {
    return 7*34 + a(m - 2);
  }
}
```

    A. The numbers are way too big!

    B. There are no errors.

    C. There is no static variable

    D. None of the above

```
   public static int aa(int mm)
{
   if(mm == -1)
   {
      return 1;
   }
   else
   {
      return 9 + aa(mm - 2);
   }
}
```

19. What will be the output after the code snippet below this question runs?

   int aaa= aa(3);

   A. 3
   B. 4
   C. 5
   D. Nothing will be printed out.

20. What will the value of i be after this code beneath this question runs?

 int i= aa(1)+1;

   A. 10
   B. 11
   C. 12
   D. 13

Explanations

1. The correct answer is **C.** A recursive method is a method. The recursive method actually calls itself.

2. The correct answer is **D.** 5-7.5 percent of the AP Computer Science A exam will feature materials from Unit 10.

3. The correct answer is **C.** Base case is a way to end recursive calls.

4. The correct answer is **B.** Super class and Java are not covered in Unit 10 of AP Computer Science A.

5. The correct answer is **A.** Merge sort is usually quicker compared to insertion sort and selection sort.

6. The correct answer is **C.** The two main parts of recursive code are base case and recursive part.

7. The correct answer is **D.** Merge sorts an array, by first dividing a list into parts, then merging back together in the right order.

8. The correct answer is **C.** A binary search can be written with a loop. A binary search can be written with a recursive function.

9. The correct answer is **D.** Since n=0, 3 is returned and 3 is printed out.

10. The correct answer is **B.** Since 1 is greater than 0, the recursive call happens. 1-1=0. Since n now equals 0, 3*3 is returned, which is 9.

11. The correct answer is **A.** The recursive method runs three times, since 2 is greater than 0, and 1 is greater than 0. 3*3*3=27.

12. The correct answer is **C.** While the code is running, call stack keeps track of the methods that are called.

13. The correct answer is **A.** The error is no semicolon after "return 5 + ma(na - 1)".

14. The correct answer is **A.** A recursive method should have at a minimum one way to end the recursive method.

15. The correct answer is actually **A.** The error is no semicolon after "return 5 + mad(naa - 2)".

16. The correct answer is **A.** To fix the error, add ";" after "return 5 + mad(naa - 2)".

17. The correct answer is **A.** Around 2-3 multiple choice questions will be on Unit 10.

18. The correct answer is **B.** There are no errors in the method.

19. The correct answer is **D.** Nothing will be printed out.

20. The correct answer is actually **B.** Since mm is greater than -1, the recursive method continues. Since -1=-1, the number 1 is returned. 1+9=10. Then, i is set to 10+1, which is 11.