AP Computer Science A - Final Practice

20 original practice questions modeled on the topics from the final review set. Circle the best answer.

1. What is printed as a result of executing the code segment?

```
int a = 12;
int b = 5;
int c = b;
b = a;
a = b - c;
System.out.println(a + " " + b);
```

(A) 7 12

(B) 12 5

(C) 17 12

(D) 7 5

2. A program will store information about each library book, including the title and the number of pages. Which design is most appropriate?

(A) A Library class with Book instance variables for the title and pages

(B) A Book class with a String instance variable for the title and an int instance variable for pages

(C) A Title class and a Pages class, each with a Book instance variable

(D) A Pages class with String instance variables for every title

3. Which of the following expressions evaluates to 4.25?

(A) (double) 5 / 4 + 3

(B) (double) (5 / 4) + 3

(C) (double) 5 / (4 + 3)

(D) (double) (5 + 4) / 3

4. Which expression can replace /* missing code */ so that the code segment prints "aceg"?

```
String word = "abcdefg";
String result = /* missing code */;
System.out.println(result);
```

(A) word.substring(0, 1) + word.substring(2, 3) + word.substring(4, 5) + word.substring(6)

(B) word.substring(0, 2) + word.substring(4, 6)

(C) word.substring(1, 3) + word.substring(5)

(D) word.substring(0, 1) + word.substring(3, 4) + word.substring(5)

5. Assume a Gadget object g has been properly declared and instantiated in a class other than Gadget. Which statement will compile without error?

```
public class Gadget
{
private int power;

public int getPower()
{
return power;
}
}
```

(A) int p = g.getPower();

(B) int p = g.power;

(C) int p = Gadget.getPower();

(D) int p = getPower(g);

6. Which method can be added to Gadget to allow other classes to change the value of power?

(A) public void setPower(int p) { power = p; }

(B) private void setPower(int p) { power = p; }

(C) public void setPower(int p) { p = power; }

(D) private void setPower(int p) { p = power; }

7. A score of 90 or above earns "high", a score from 70 through 89 earns "medium", and any lower score earns "low". Which code segment correctly replaces /* missing code */?

```
public static String level(int score)
{
/* missing code */
}
```

(A) if (score >= 90) return "high"; else if (score >= 70) return "medium"; else return "low";

(B) if (score >= 90) return "high"; if (score >= 70) return "medium"; return "high";

(C) if (score < 70) return "medium"; else if (score < 90) return "low"; else return "high";

(D) if (score >= 70) return "medium"; else if (score >= 90) return "high"; else return "low";

8. Which statement will cause a compilation error?

```
public class Course
{
public Course() { }
public Course(String name) { }
public Course(String name, int period) { }
}
```

(A) Course c1 = new Course();

(B) Course c2 = new Course(3);

(C) Course c3 = new Course("Art");

(D) Course c4 = new Course("Art", 3);

9. What is the value of total after the code segment is executed?

```
int a = 8 - 2 * 3;
int b = 9 / 4 + 6;
int c = 10 % 6 + 1;
double total = a + b + c;
```

(A) 10.0

(B) 12.0

(C) 14.5

(D) 15.0

10. Which statement best describes the behavior of the code segment?

```
if (n < 0)
{
if (n % 2 == 0)
{
System.out.println("E");
}
else
{
System.out.println("O");
}
}
```

(A) It prints "E" for every even integer and "O" for every odd integer.

(B) It prints "E" for negative even integers, "O" for negative odd integers, and prints nothing otherwise.

(C) It prints "O" for negative even integers, "E" for negative odd integers, and prints nothing otherwise.

(D) It prints nothing for negative integers.

11. Which statement always assigns the same value to b2 as the code segment assigns to b1?

```
boolean b1 = true;
if (num >= 50)
{
b1 = false;
}
else
{
if (num < -50)
{
b1 = false;
}
}
```

(A) boolean b2 = (num > -50) && (num < 50);

(B) boolean b2 = (num >= -50) && (num < 50);

(C) boolean b2 = (num >= 50) || (num < -50);

(D) boolean b2 = (num <= -50) || (num > 50);

12. Which code segment produces the output "246810"?

(A) int x = 2; while (x <= 10) { System.out.print(x); x += 2; }

(B) int x = 0; while (x < 10) { System.out.print(x); x += 2; }

(C) int x = 2; while (x < 10) { System.out.print(x); x += 2; }

(D) int x = 1; while (x <= 10) { x += 2; System.out.print(x); }

13. Which replacement for /* missing code */ will cause the code segment to print nothing?

```
int x = 2;
while (x < 20)
{
if (x % 3 == 0)
{
System.out.print(x + " ");
}
/* missing code */
}
```

(A) x++;

(B) x += 2;

(C) x += 3;

(D) x *= 2;

14. Which of the following represents the contents of vals after the code segment is executed?

```
ArrayList<Integer> vals = new ArrayList<Integer>();
vals.add(4);
vals.add(6);
vals.add(8);
vals.add(1, 5);
vals.set(2, 7);
```

(A) [4, 5, 7, 8]

(B) [4, 7, 6, 8]

(C) [5, 7, 6, 8]

(D) [4, 5, 6, 7]

15. What is printed as a result of executing the code segment?

```
for (int r = 1; r <= 3; r++)
{
for (int c = 1; c <= r; c++)
{
System.out.print(c + " ");
}
System.out.println();
}
```

(A) 1 2 3
1 2
1

(B) 1
1 2
1 2 3

(C) 1 1 1
2 2
3

(D) 3
2 3
1 2 3

16. Which best describes the value returned from a call to sumWhat?

```
/** Precondition: num > 0 */
public static int sumWhat(int num)
{
int total = 0;
for (int k = 2; k <= num; k += 2)
{
total += k;
}
return total;
}
```

(A) The sum of all integers from 1 through num

(B) The sum of all odd integers from 1 through num

(C) The sum of all even integers from 1 through num

(D) No value is returned because of an infinite loop

17. Which code segment counts the number of values greater than 100 in the int array data and stores the count in count?

(A) int count = 0; for (int i = 0; i < data.length; i++) { if (data[i] > 100) { count++; } }

(B) int count = 0; for (int i = 1; i < data.length; i++) { if (data[i] > 100) { count++; } }

(C) int count = 0; for (int x : data) { if (data[x] > 100) { count++; } }

(D) int count = 0; int i = 0; while (i < data.length) { if (data[i] > 100) { count++; i++; } }

18. What is printed as a result of executing the code segment?

```
public class Counter
{
private int id;
private static int total = 0;

public Counter(int n)
{
id = n;
total++;
}

public void addOne()
{
total++;
}

public void addMany(int n)
{
total += n;
}

public int getTotal()
{
return total;
}
}

Counter a = new Counter(1);
Counter b = new Counter(2);
a.addMany(3);
b.addOne();
System.out.println(a.getTotal());
```

(A) 2

(B) 3

(C) 5

(D) 6

19. What value is returned by mystery(nums)?

```
public static int mystery(int[] arr)
{
int total = 0;
for (int k = 1; k < arr.length; k += 2)
{
total += arr[k];
}
return total;
}

int[] nums = {4, 3, 9, 2, 5, 7};
```

(A) 10

(B) 12

(C) 15

(D) 30

20. Which best describes the value returned by sumColumn?

```
public static int sumColumn(int[][] nums, int col)
{
int result = 0;
for (int row = 0; row < nums.length; row++)
{
if (nums[row][col] < 0)
{
result += nums[row][col];
}
}
return result;
}
```

(A) The sum of all negative values in column col

(B) The sum of all negative values in row col

(C) The number of negative values in column col

(D) The number of negative values in row col

Answer Key

1. A 2. B 3. A 4. A 5. A 6. A 7. A 8. B 9. B 10. B 11. B 12. A 13. D 14. A 15. B 16. C 17. A 18. D 19. B 20. A

Teacher note: These are new questions, not a copy of the original test. They cover variable tracing, class design, casting, String methods, accessors/mutators, conditionals, constructors, arithmetic, Boolean logic, loops, ArrayList operations, nested loops, arrays, static variables, methods, and 2D arrays.