CS2050 – C Programming Quiz 5 SPRING 2017

There are 10 questions on this quiz. DO NOT PUT YOUR ANSWERS ON THIS SHEET – RECORD THEM ON THE ANSWER SHEET ONLY.

1. A selection sort algorithm with efficiency of O(n2) would take approximately \_\_\_\_\_\_

times longer to run on a 16-element array as on a 2-element array.

a) 16 times b) 64 times c) 32 times d) none of these

2) What is the proper big O notation for the following algorithm?

for(int x=0; x<n; x++) {

int min = x;

for(int y=x; y<n; y++) {

if(array[y]<array[min])

min=y; }

int temp = array[x];

array[x] = array[min];

array[min] = temp;

}

3) What would be the big O notation for the following function: f(n) = an3 + bn2 + cn + 4

4) The binary search algorithm runs in

a) O(log n) complexity b) O(n) complexity c) O(n2) complexity d) none of these

5) T / F Running times for an algorithm cannot be equated to efficiency.

6) What is the proper big O notation for the following function?  
 void doIt (int n) {

int a=10, b=20, i=0;

for (i=0; i<n; i++)

printf(“%d\n”, a+=1);

for (i=0; i<n; b++)

printf(“%d\n”, b+=1);  
 }  
Match the statement on the left to the notation on the right. You may use an answer more than once.

7) What is the complexity of driving a car “N” miles regarding time? A. O (n)

B. O (1)

8) What is the complexity required to test whether the FIRST element of an C. O (n2)  
 array is equal to the SECOND element of the array? D. O (log n)

E. O (n60)

9) What is the complexity that tests whether the FIRST element of an array F. O (60)  
 is equal to ANY of the other elements of the array? G. O (nlog n)

H. None of

10) What is the complexity of reading a character string of length 60 from a the above

a file of size N?

CS2050 – C Programming Quiz 5 NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SPRING 2017 LAB SECTION \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ANSWERS

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. T / F

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_