Name: KEY Id#

ICS 103, Term 083

Computer Programming in C

Quiz# 4

 Date: Tuesday, August 25, 2009

**Find the output of each of the following programs:**

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| --- | --- |
| **Program** | **Output** |
| 1. **5 points**

**#include <stdio.h>** **int test(int a[], int t, int n)** **{** **int i=0, j=-1, k=0;**  **while (!k && i < n) {** **if (a[i] == t)k = 1;** **else i++;** **}** **if (k) j=i;**  **return j;****}****int main(void)****{** **int x[]={10, 5, 15, 20, 1};**  **printf("%d\n", test(x,15,5));** **return 0;****}**   | **2**The function test is a linear search function and it is called to search for number 15 in array x and it returns its index which is 2. |
| 1. **5 points**

 **#include <stdio.h>****int main(void)****{** **int x[]={10, 5, 15, 20, 1};**  **int i, j, k, l;**  **for (i=0; i<4; i++) {** **k=i;**  **for (j=i+1; j<5; j++)** **if (x[j] < x[k])** **k = j;** **l=x[i]; x[i]=x[k]; x[k]=l;** **}** **for (i=0; i<5; i++)**  **printf("%d ", x[i]);** **return 0;****}**  | **1 5 10 15 20**The program sorts the array x in ascending order using selection sort algorithm and prints the sorted array.  |
| 1. **5 points**

**#include <stdio.h>** **#include <string.h>** **int main(void)****{** **int i;** **char x[]="ICS";**  **for (i=0; i<strlen(x); i++)** **puts(&x[i]);** **return 0;****}**  | **ICS****CS****S**The program prints the string x 3 times, the first time starting from the first character, the second time starting from the second character and the third time starting from the third character. |
| 1. **5 points**

**#include <stdio.h>** **#include <string.h>** **int main(void)****{** **int i;** **char x[5]={0}, y[]="A";**  **for (i=0; i<4; i++){** **strcat(x,y);** **y[0]++;** **puts(x);**  **}** **return 0;****}**  | **A****AB****ABC****ABCD**The program concatenates string x and y in each iteration and then prints the concatenated string x and increments the character stored in the string y.In the first iteration, x has no characters and y=”A”. Thus, the concatenated string x=”A”.In the second iteration, x =”A” and y=”B”. Thus, the concatenated string x=”AB”.In the third iteration, x =”AB” and y=”C”. Thus, the concatenated string x=”ABC”.In the fourth iteration, x =”ABC” and y=”D”. Thus, the concatenated string x=”ABCD”. |