

CS 2213 Midterm Exam 1 Solutions — Spring 2001

1) (10 points) D 68 68 6870

2) (12 points) (2 points each) a) F b) F c) T d) F e) F f) F

3) (15 points)

Dependent								Independent							
line	x	y	z[0]	z[1]	z[2]	*ip	*jp	line	x	y	z[0]	z[1]	z[2]	*ip	*jp
1		10	10	11	12	11	10	1		10	10	11	12	11	10
2	10	10	10	11	12	11	11	2	10		10	11	12	11	11
3	10	12	10	11	12	11	12	3		11	10	11	12	11	11
4	11	12	10	12	12	12	12	4	11		10	12	12	12	10
5	11	11	10	11	12	11	12	5		10	10	10	12	10	10
6	12	11	10	11	12	11	13	6	10		10	11	12	11	11
7	12	14	10	11	12	11	14	7		11	11	11	12	11	11

4) (15 points)

```
int greaterArray(int a[], int b[], int size) {
    int i;
    for (i=0; i<size; i++)
        if (a[i] <= b[i]) return 0;
    return 1;
}
```

5) (23 points)

a) i) parent = $(k - 1)/2$ ii) left child = $2 * k + 1$ iii) right child = $2 * k + 2$

b)

```
if (2*k+1 >= n) x = -1;
else if ((2*k+2) == n) x = 2*k+1;
else if (vals[2*k+1] > vals[2*k+2]) x = 2*k+1;
else x = 2*k+2;
```

c)

```
int temp;
if (k > 0) {
    temp = vals[(k-1)/2];
    vals[(k-1)/2] = vals[k];
    vals[k] = temp;
}
```

6) (20 points)

```
#include <stdio.h>

int main () {
    int c;
    int outputFlag = 0;
    int newlineFlag = 1;

    while ( (c=getchar()) != EOF ) {
        if (newlineFlag) {
            if ( (c >= 'A') && (c <= 'Z'))
                outputFlag = 1;
            else
                outputFlag = 0;
            newlineFlag = 0;
        }
        if (outputFlag)
            putchar(c);
        if (c == '\n')
            newlineFlag = 1;
    }
    return 1;
}
```