

Midterm One

Name: _____

Please write your name. You have 45 minutes. The exam is closed book.

Question	Points
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

1

What does a call of `len("hi")` return?

```
int len(char *s) { int i=0; while(*(++s)!='\0') i++; return i; }
```

(a) 0 (b) 1 (c) 2 (d) 3

3

The statement `s[i] = i++` increment the variable first and then assigns the modified variable

(a) YES (b) NO

4

Local variables are guaranteed to be initialized.

(a) YES (b) NO

5

Given `int* p` and `char* c`. `sizeof(p)>sizeof(c)`?

(a) YES (b) NO

6

What does the following program print?

```
void s(int a,int b){ static int s=0; s+=a; s+=b; printf("%d,%d,",s,a-b); }  
int main() { s(10,20); s(20,10); }
```

(a) 0,10,30,10, (b) 30,-10,30,10, (c) 30,-10,60,10, (d) 30,10,30,10

7

What does the following program print?

```
int fact(int n) { return n ? 1 : n*fact(n-1); }  
int main() {printf("%d",fact(-1));}
```

(a) 0 (b) 1 (c) does not terminate

8

What does the following program print?

```
int main() {
    for (char c='a'; c<'d'; ++c) {
        switch (c) {
            case 'a':    c += 2; case 'c': c += 1;
            case 'g':    ++c; printf("%c,",c--);
            default:    ++c;
        }
        printf ("%c\n" , c);
    } }

```

(a) a (b) d (c) e,e (d) g,g

9

The following program is intended to compute $5! = 120$, but prints 24 instead.

```
int main () {                                // line 1
    int n = 5, t = 1;                        // line 2
    while (n > 1) t *= --n;                  // line 3
    printf ("%d",t);                         // line 4
}

```

Propose a one line change that produces the right value.

LINE 3 NEW code: _____

10

Consider the following function intended to return a characters read from standard input.

```
char* readWord() {
    int i=0; char name[11]="xxxxxx"; char *p;
    while (i++ < 10) name[i]=getchar();
    name[i]='\0'; return p=&name[0];
}
int main() {
    char* p = readWord();
    printf("string=%s.\n",p);
}

```

A user reported that the program printed `string=.` is this possible?

(a) YES (b) NO