

Name:

ID:

Time: 40 mins

Marks: 20

1. Alin wrote the following code:

```
#include<stdio.h>

int main(int argc, char** argv){
    printf("%d\n", argc);
    for(int i=0; i<argc; i+=2){
        printf("%s\n", argv[i]);
    }
    return 0;
}
```

He ran the following commands.

```
$ gcc main.c
$ ./a.out box table name 10
```

What output will he see?

3

2. Ani wrote the following code to update the value of a student record in the database. The student record can be described with the following struct.

```
typedef struct student
{
    char name[30];
    int age;
} Student;
```

```
void update_info(Student s, char new_name[30], int
new_age){
    strcpy(s.name, new_name);
    s.age = new_age;
}
```

3. Given a number  $n$ , it will print  $I_n$ .  $I_n$  stands for an identity matrix of size  $n \times n$ . Write a code for this. You have to use a single-level pointer to represent the 2D array. You can assume the input given will always be valid.

Input	Output
2	1 0 0 1
3	1 0 0 0 1 0 0 0 1

Memory Content	502	700	104	100	106	0xf	'f'	10
Address	100							107
Memory Content	'a'	200	70	102	211	769	103	0x200
Address	500							507

Memory Content	505	0x20	23	103	104	100	106	0xf
Address	0x100							0x107

Find out the value of the following:

- a.  $\star(\star m + 2) - 5$  when  $m = 102$  4
- b.  $\star(\star(\star m + 1) - 3) + 2$  when  $m = 0x100$  2