1. What is the difference between the following two declarations.   2 pts

   int *p[10];

   int (*p) [10];

2. Please explain the following two declarations.   3 pts

   int (*p)(char (*a)[]);

   int *p(char (*a)[]);

3. Take a look at the following code snippet. Here, **pFcn** is a pointer to a function that takes two integer arguments and returns an integer. To make different cases in switch statement work, write a few functions such as 'Add', 'Subtract', 'Multiply', and 'Divide' that take two integers as arguments and return an integer. Then uncomment different case statements and printf statement to print the value of **pFcn(X,Y)**.   4 pts

   Submit as a complete working code named as **FunctionPointer.c.**

```
#include <stdio.h>
int(*pFcn)(int, int);
int main(){
     int X, Y, operation;
     printf("Enter a number: ");
     scanf(" %d", &X);
     printf("Enter another number: ");
     scanf(" %d", &Y);
     printf("Enter an operation (0=add, 1=subtract, 2=multiply, 3 = Divide ): ");
     scanf(" %d", &operation);

    switch (operation) {
    //  case 0: pFcn = Add; break;
    //  case 1: pFcn = Subtract; break;
    //  case 2: pFcn = Multiply; break;
    //  case 3: pFcn = Divide; break;
     }
   //   printf("The answer is : %d\n", pFcn(X,Y));
     return 0;
}
```

4. Take a look at the following code snippet: 2 pts

```
struct Person{
    char name[BUFSIZ];
    char ssn[BUFSIZ];
    int age;
    float height;
    float weight;
};
struct Person p1;

strcpy(p1.name, "Alfred Morino");
strcpy(p1.ssn, "496-50-2260");
p1.age = 50;
p1.height = 170.5;
p1.weight = 70.5;


struct Person *ptr = &p1;
```

What will be printed by the following expressions? Submit the output capture of your C code for your answer.

printf("Name = %s\nSSN = %s\nAge = %d\nHeight(cm) = %g\nWeight(kg) = %g\n", p1.name, p1.ssn,p1.age, p1.height, p1.weight);

printf("Name = %s\nSSN = %s\nAge = %d\nHeight(cm) = %g\nWeight(kg) = %g\n", ptr->name, ptr->ssn, ptr->age, ptr->height, ptr->weight);

printf("Name = %s\nSSN = %s\nAge = %d\nHeight(cm) = %g\nWeight(kg) = %g\n", (*ptr).name, (*ptr).ssn, (*ptr).age, (*ptr).height, (*ptr).weight);

printf("Name = %s\nSSN = %s\nAge = %d\nHeight(cm) = %g\nWeight(kg) = %g\n", (&p1)->name, (&p1)->ssn, (&p1)->age, (&p1)->height, (&p1)->weight);

5. Take a look at the attached file "**structConversion.c**". Use the struct template "**Person**" as mentioned in question 4.

- Modify the following two functions as follows.
  - void printData(struct Person x);   3 pts
  - struct Person readData();   3 pts

- Replace **gets** with **fgets**.   3 pts

You can use any additional helper functions. Submit the complete file as "**structConversionLab5.c**" file.

Submission:

A zip file containing:
- Your Complete C code named **FunctionPointer.c, structConversionLab5.c** and a pdf file named **PointersAndStructLab5.pdf** containing the answers to questions 1, 2 with output capture for C code for question 4.

Name your zip file with your last name first letter of your first name Lab5.zip (ex: **yasminsLab5.zip**)

 Submission deadline is: 11:59 pm, Friday, March 1. No late submission will be considered.