1. Correct String: pwzd0notxpld

2. a)

```c
#include <stdio.h>
#include <stdlib.h>

int main() {

    char ch[40];

    char* msg0 = "Enter diffuse string:";

    char* msg1 = "BOOM!! Bomb Exploded. Bye! Bye!\n";

    char* msg2 = "Bomb Defused! Good work!\n";

    char* fusedata = "abcdefghijklmnopqrstuvwxyz0123456789 \n";

    int arr[] = {15, 11, 25, 3, 26, 13, 14, 19, 23, 15, 11, 3};

    int x;

    int y;

    printf("%s\n", msg0);

    fgets(ch, sizeof(ch), stdin);
```

```c
for (x=0; ch[x]!=0 && ch[x]!=10;) {                    //.L6 , .L3 , .L2

        y = arr[x];

        if (ch[x] <= 96 || ch[x] > 122) {

                if (ch[x] != fusedata[arr[x]-2]) {   //.L6

                        x = x + 1;
                }

                else {

                        printf("%s\n", msg1);

                        exit(1);
                }

        }

        else {

                ch[x] = ch[x] - 32;

        }
}

printf("arr is 48\n");
```

```c
        if(x==12) {          //.L5

                printf("%s\n", msg2);     //.L7

                exit(0);

        } else {  //.L5

                printf("%s\n", msg1);

                exit(1);
        }

} // End of Program
```

/*

        In order to get the framework for the program as well as key values, I analyzed the assembly
code. The following lines proved to be helpful:

```asm
        ldr      r3, .L9_24 //r3=y=arr[x]
        ldr      r3, [r3, #0]
        ldr      r1, .L9+28 //r1=fusedata
        ldrb     r3, [r1, r3] //r3=fusedata[y]=fusedata[arr[x]]
        cmp      r2, r3
        beq      .L4
```

*/