ASS 1

1)

Grammar:

```
E → iE'
E' → +iE' | ε
```

Recursive Descent Parser C Code:

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

int i = 0, t = 1;
char str[20];

void E();
void EPRIME();
void error();

int main() {
    printf("The given grammar is:\n");
    printf("\nE -> iE'");
    printf("\nE' -> +iE' | ε");

    printf("\nEnter the string to be parsed: ");
    scanf("%s", str);

    E();

    if (t != 1 || str[i] != '\0') {
        printf("\nGiven string is not accepted\n");
    } else {
        printf("\nThe given string is accepted\n");
    }

    return 0;
}

void E() {
    if (str[i] == 'i') {
        i++;
        EPRIME();
    } else {
        error();
    }
}

void EPRIME() {
    if (str[i] == '+') {
        i++;
        if (str[i] == 'i') {
            i++;
            EPRIME();
        } else {
            error();
        }
    }
}
```

```
void error() {
    t = -1;
}
```

OUTPUT

The given grammar is:

E -> iE'

E' -> +iE' | ε

Enter the string to be parsed: i+i+i

The given string is accepted

2)

+-