

3. Consider the following C-program.

```
#include <stdio.h>

int func(int [], int, int);
int main()
{
    int list[12];
    int size=12, index, elem;
    int count = 0, i;

    index = 12size;

    printf("Enter element from list:");
    scanf("%d", &elem);
    13

    printf("Index is: ");
    while (index > 0)
    {
        11 index=func(list, index-1, elem);
        /* In array 1st position has index 0 */
        if(index != -1) {
            printf(" %d, ", index + 1);
            count++; }
    }

    if (!count)
        printf("No success obtained.\n");

    return 0;
}

list
11
13
int func(int array[], int size, int elem)
{
    list int k;
    if (array[size] == elem)
    {
        return size;
    }
    else if (size == -1)
    {
        return -1;
    }
    else
    {
        k = func(array, size - 1, elem);
        return k;
    }
}
```

For each of the following initialisations for the int list[12] and the given value of elem, write the output.

(a)

```
int list[12] = { 7, 10, 9, 7, 5, 7,
                 10, 0, 9, 1, 2, 7 };
elem = 7
```

(b)

```
int list[12] = { 6, 10, 6, 2, 1, 4,
                 0, 6, 3, 1, 8, 4 };
elem = 1
```

(c)

```
int list[12] = { 13, 1, 12, 10, 8, 10,
                 1, 12, 9, 1, 2, 7 };
elem = 13
```

(d)

```
int list[12] = { 13, 1, 12, 10, 8, 10,
                 1, 12, 9, 1, 2, 7 };
elem = 11
```

1)

~~index = 11~~

Index is: 12

2) 10

3) 1

4) No success obtained

$f(11)$
 $\sum k = f(10)$
 $9 \rightarrow k = f(9)$
 9