

```
import java.util.*;
```

```
class Day85 {
```

```
    static ArrayList<Integer> tree[];
```

```
    static int f[][];
```

```
    static Long dp[][];
```

```
    static Long dp2[][];
```

```
    static long mod = (long) (1e9 + 7);
```

```
    public static void main(String[] args) {
```

```
        Scanner input = new Scanner(System.in);
```

```
        int t = input.nextInt();
```

```
        while (t-- > 0) {
```

```
            int n = input.nextInt();
```

```
            int m = input.nextInt();
```

```
            int l = input.nextInt();
```

```
            String s = input.next();
```

```
            char a[] = input.next().toCharArray();
```

```
            tree = new ArrayList[n + 1];
```

```
            for (int i = 0; i <= n; i++) {
```

```
                tree[i] = new ArrayList<>();
```

```
            }
```

```
            int x[] = new int[m];
```

```
            for (int i = 0; i < m; i++) {
```

```
                x[i] = input.nextInt();
```

```
            }
```

```
f = new int[n + 1][n + 1];
```

```
for (int i = 0; i < m; i++) {  
    int y = input.nextInt();  
    tree[x[i]].add(y);  
    tree[y].add(x[i]);  
    f[x[i]][y]++;  
    f[y][x[i]]++;  
}
```

```
long res = 0;
```

```
dp = new Long[n + 2][22];
```

```
for (int i = 1; i <= n; i++) {  
    res += dfs(i, 0, s, l, a);  
    res %= mod;  
}
```

```
boolean allSame = true;
```

```
for (int i = 1; i < l; i++) {  
    if (s.charAt(i) != s.charAt(i - 1)) allSame = false;  
}
```

```
if (allSame) {
```

```
    long temp = 0;
```

```
    dp2 = new Long[n + 1][n + 1];
```

```
    boolean v[][] = new boolean[n + 1][n + 1];
```

```
    for (int i = 1; i <= n; i++) {  
        for (int c : tree[i]) {
```

```

        if (v[i][c]) continue;
        if (a[i - 1] == a[c - 1]) {
            v[i][c] = true;
            v[c][i] = true;
            temp += power(f[i][c], l - 1, mod);
            temp %= mod;
        }
    }
}

System.out.println((res - temp + mod) % mod);
} else {
    System.out.println(res);
}
}
}

private static long dfs(int i, int j, String s, int l, char[] a) {
    if (j == l - 1) {
        if (s.charAt(j) != a[i - 1]) return 0;
        return 1;
    }

    if (s.charAt(j) != a[i - 1]) return 0;

    if (dp[i][j] != null) return dp[i][j];

    long ans = 0;

    for (int c : tree[i]) {
        ans += dfs(c, j + 1, s, l, a) % mod;
    }
}

```

```
        ans %= mod;
    }

    return dp[i][j] = ans % mod;
}

private static long power(long x, long y, long p) {
    long res = 1;
    x = x % p;

    while (y > 0) {
        if ((y & 1) > 0) res = (res * x) % p;
        y = y >> 1;
        x = (x * x) % p;
    }

    return res;
}
```