

Which of the following tests will fail?

- (a) `#if M`
- (b) `#ifdef M`
- (c) `#ifndef M`
- (d) `#if defined(M)`
- (e) `#if !defined(M)`

13. (a) Show what the following program will look like after preprocessing. You may ignore any lines added to the program as a result of including the `<stdio.h>` header.

```
#include <stdio.h>

#define N 100

void f(void);

int main(void)
{
    f();
#ifdef N
#undef N
#endif
    return 0;
}

void f(void)
{
#ifdef defined(N)
    printf("N is %d\n", N);
#else
    printf("N is undefined\n");
#endif
}
```

- (b) What will be the output of this program?

- Ⓜ*14. Show what the following program will look like after preprocessing. Some lines of the program may cause compilation errors; find all such errors.

```
#define N = 10
#define INC(x) x+1
#define SUB (x,y) x-y
#define SQR(x) ((x)*(x))
#define CUBE(x) (SQR(x)*(x))
#define M1(x,y) x##y
#define M2(x,y) #x #y

int main(void)
{
    int a[N], i, j, k, m;

#ifdef N
    i = j;
#else
    j = i;
#endif

    i = 10 * INC(j);
```