1. Consider the following program. Will it compile and run without errors? If so, what will be its output?

```c
int main(void)
{
    /* block 1: this block surrounds blocks 2, 3, 4 */
    int i = 1;
    printf("%d\n\n", i);
    {                            /* block 2 */
        int i = 2;
        printf("%d\n\n", i);
        i++;
    }
    {                            /* block 3 */
        printf("%d\n\n", i);
    }
    {                            /* block 4 */
        int i = 4;
        printf("%d\n\n", i);
        i = 5;
    }
    /* back in block 1 */
    return 0;
    printf("%d\n\n", i);
}
```

2. Consider the following complete program. (Line numbers are included for ease of reference and are, obviously, not part of the code.)

```c
01. #include <stdio.h>
02. #include <stdlib.h>
03.
04. int i = 1;
05.
06. int main(void)
07. {
08.    printf("%d\n\n", i);
09.    {                            /* block 2 */
10.        int i;
11.        i = 2;
```
12.     printf("%d\n\n", i);
13. }
14. {                            /* block 3 */
15.     int i;
16.     i = 3;
17.     printf("%d\n\n", i);
18. }
19. {                            /* block 4 */
20.     int i;
21.     i = 4;
22.     printf("%d\n\n", i);
23.     i = 5;
24. }
25. /* back in block 1 */
26. printf("%d\n\n", i);
27. return 0;
28. }

What will be the output of the above program when compiled and run? It is compiled stand-alone, not linked with any library (except the standard library) or other object files.

3. Now consider the program of Q2, and assume that the following line is used to replace different lines of the program (as mentioned below):

extern int i;

What will be its output when compiled and run? The different scenarios are:

(a) Only line 10 is replaced.
(b) Only line 15 is replaced.
(c) Only line 20 is replaced.
(d) Each of lines 10, 15, 20 is replaced at the same time.