

1. What will be the output of the following code?

```
for(int i = 0; i < 5; i++);  
System.out.println("i is: " + i);
```

2. Consider:

```
int i = 0;  
while(i < 5)  
    i++;  
System.out.println(i);
```

3. What is printed by this?

```
for(int i = 0; i < 10; i += 2) {  
    System.out.print(i + " ");  
}
```

4. Which of these loops is guaranteed to execute at least once even if the condition is false initially?

5. What does this code print?

```
int i = 0;  
while(i++ < 5)  
    System.out.print(i + " ");
```

6. Identify the loop type:

```
for(;;) {  
    System.out.println("Hello");  
}
```

7. What happens here?

```
int i = 5;  
while(i-- != 0)  
    System.out.print(i + " ");
```

8. How many times does the loop run?

```
for(int i = 0; i <= 10; i = i + 3)
    System.out.print(i + " ");
```

9. What's the output?

```
int i = 0;
while(++i < 5)
    System.out.print(i + " ");
```

10. Will this compile?

```
int i = 0;
for( ; ; ) {
    if(i == 3)
        break;
    i++;
}
```

11. What's printed?

```
for(int i = 1; i <= 3; i++)
    for(int j = 1; j <= i; j++)
        System.out.print(j);
```

12. What does this do?

```
int i = 0;
while(i++ < 3) {
    int j = 0;
    while(j++ < 2)
        System.out.print(j + " ");
}
```

13. How many iterations?

```
for(int i = 10; i > 0; i = i - 4)
    System.out.print(i + " ");
```

14. Predict the output:

```
for(int i = 0; i < 5; i++)
    for(int j = 0; j < 1; j++)
        System.out.print(i + j + " ");
```

15. Will this run infinitely?

```
int i = 0;
while(i != 10) {
    i = i + 2;
    System.out.print(i + " ");
}
```

16. What will this print?

```
for(int i = 0; i < 3; i++)
    for(int j = 0; j < 3; j++)
        if(i == j)
            System.out.print(i + " ");
```

17. How many times is "Hello" printed?

```
int i = 1;
while(i < 10) {
    System.out.print("Hello ");
    i = i * 2;
}
```

18. Predict the result:

```
int i = 10;
while(i > 0) {
    if(i == 5)
        break;
    System.out.print(i + " ");
    i--;
}
```

19. Is the inner loop ever entered?

```
for(int i = 0; i < 5; i++)
    for(int j = 5; j < i; j++)
        System.out.print("X");
```

20. How does this behave?

```
int x = 0;
while(x++ < 2)
    for(int y = 0; y < 2; y++)
        System.out.print(x + "," + y + " ");
```

21. Consider:

```
int i = 0;
while(true) {
    if(i++ > 2)
        break;
    System.out.print(i + " ");
}
```

22. Output of:

```
for(int i = 0; i < 3; i++)
    for(int j = 0; j < 2; j++)
        if(i + j > 2)
            System.out.print(i + j + " ");
```

23. What will this print?

```
int i = 0;
while(i < 5)
    System.out.print(++i + " ");
```

24. Will this terminate?

```
int i = 0;
while(i != 10) {
    i += 3;
}
```

25. Trace the output:

```
for(int i = 1; i <= 3; i++)
    for(int j = i; j <= 3; j++)
        System.out.print(i + j + " ");
```

26. What is printed here?

```
int i = 0;
for(; i < 5; ) {
    System.out.print(i + " ");
    i++;
}
```

27. Can this loop run?

```
int i = 5;
while(i < 5)
    System.out.print(i + " ");
```

28. Analyze:

```
int i = 0;
for(; i < 2; i++)
    for(int j = 0; j < 2; j++)
        for(int k = 0; k < 1; k++)
            System.out.print(i + j + k + " ");
```

29. Behavior of loop:

```
for(int i = 10; i >= 0; i = i - 2)
    if(i % 4 == 0)
        System.out.print(i + " ");
```

30. What happens?

```
int i = 0;
while(i < 3) {
    i++;
    if(i == 2)
        continue;
```

```
System.out.print(i + " ");  
}
```