

- Write the output of the given code snippets or identify any errors.
- Answer all questions to the best of your ability.

1. What is the output of the following C code?

```
#include <stdio.h>
```

```
void func(int *ptr) {  
    *ptr = 10;  
}
```

```
int main() {  
    int x = 5;  
    func(&x);  
    printf("%d\n", x);  
    return 0;  
}
```

Output: _____

2. What is the output of the following C code?

```
#include <stdio.h>
```

```
int main() {  
    int arr[] = {1, 2, 3, 4, 5};  
    int *ptr = arr;  
    printf("%d\n", *(ptr + 2));  
    return 0;  
}  
...
```

Output: _____

3. Identify the error(s) in the following C code, if any:

```
#include <stdio.h>
```

```
int main() {  
    int a = 10;
```

```

if(a = 5) {
    printf("a is 5\n");
} else {
    printf("a is not 5\n");
}
return 0;
}

```

Output: _____

4. What is the output of the following Java code?

```

public class Test {
    public static void main(String[] args) {
        String str = "hello";
        str = str + " world";
        System.out.println(str);
    }
}

```

Output: _____

5. What is the output of the following Java code?

```

public class Test {
    public static void main(String[] args) {
        int[] arr = {1, 2, 3, 4, 5};
        for(int i = 0; i < arr.length; i++) {
            arr[i] = arr[i] * 2;
        }
        for(int i = 0; i < arr.length; i++) {
            System.out.print(arr[i] + " ");
        }
    }
}

```

Output: _____

6. Identify the error(s) in the following Java code, if any:

```
public class Test {  
    public static void main(String[] args) {  
        int x = 10;  
        int y = 0;  
        System.out.println(x / y);  
    }  
}
```

Output: _____

7. What is the output of the following C++ code?

```
#include <iostream>  
using namespace std;  
  
void func(int &ref) {  
    ref = 20;  
}  
  
int main() {  
    int x = 10;  
    func(x);  
    cout << x << endl;  
    return 0;  
}
```

Output: _____

8. What is the output of the following C++ code?

```
#include <iostream>  
using namespace std;  
  
class Test {  
public:  
    static int count;  
    Test() {  
        count++;  
    }  
};
```

```
    }  
};
```

```
int Test::count = 0;
```

```
int main() {  
    Test t1, t2, t3;  
    cout << Test::count << endl;  
    return 0;  
}
```

Output: _____

****9. Identify the error(s) in the following C++ code, if any:****

```
```cpp  
#include <iostream>
using namespace std;

class Test {
 int x;
public:
 Test() {
 x = 0;
 }
 void display() {
 cout << x << endl;
 }
};
```

```
int main() {
 Test t;
 t.display();
 return 0;
}
```

Output: \_\_\_\_\_

**\*\*1. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

int main() {
 int a = 5, b = 10, c;
 c = a + b;
 printf("%d\n", c);
 return 0;
}
...

```

Output: \_\_\_\_\_

**\*\*2. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

int main() {
 int x = 10;
 x = x++ + ++x;
 printf("%d\n", x);
 return 0;
}
...

```

Output: \_\_\_\_\_

**\*\*3. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

int main() {
 int arr[5] = {1, 2, 3, 4, 5};
 int *p = arr;
 printf("%d\n", *(p + 3));
 return 0;
}
...

```

Output: \_\_\_\_\_

**\*\*4. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

void swap(int *a, int *b) {
 int temp = *a;
 *a = *b;
 *b = temp;
}

int main() {
 int x = 5, y = 10;
 swap(&x, &y);
 printf("%d %d\n", x, y);
 return 0;
}
...

```

Output: \_\_\_\_\_

**\*\*5. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

int main() {
 char str[] = "hello";
 printf("%c\n", *(str + 2));
 return 0;
}
...

```

Output: \_\_\_\_\_

**\*\*6. Identify the error(s) in the following C code, if any:\*\***

```
``c
#include <stdio.h>

int main() {
 int *p = NULL;
 *p = 10;
}

```

```
 printf("%d\n", *p);
 return 0;
}
...
```

Error: \_\_\_\_\_

**\*\*7. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

int main() {
 int a = 5, b = 10;
 if (a < b) {
 printf("a is less than b\n");
 } else {
 printf("a is not less than b\n");
 }
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*8. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

int main() {
 int i;
 for (i = 0; i < 5; i++) {
 printf("%d ", i);
 }
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*9. What is the output of the following C code?\*\***

```
``c
```

```
#include <stdio.h>
```

```
int main() {
 int i = 0;
 while (i < 5) {
 printf("%d ", i);
 i++;
 }
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*10. Identify the error(s) in the following C code, if any:\*\***

```
``c
#include <stdio.h>

int main() {
 int a = 10;
 int b = 0;
 int c = a / b;
 printf("%d\n", c);
 return 0;
}
...
```

Error: \_\_\_\_\_

**\*\*11. What is the output of the following C code?\*\***

```
``c
#include <stdio.h>

int main() {
 int x = 5;
 int *p = &x;
 *p = 20;
 printf("%d\n", x);
 return 0;
}
...
```



Output: \_\_\_\_\_

**\*\*12. What is the output of the following C code?\*\***

```
```\n#include <stdio.h>\n\nint main() {\n    char ch = 'A';\n    printf("%c\\n", ch + 1);\n    return 0;\n}\n\\`
```

Output: _____

****13. Identify the error(s) in the following C code, if any:****

```
```\n#include <stdio.h>\n\nint main() {\n    int x = 5;\n    int y = 10;\n    if (x = y) {\n        printf("x is equal to y\\n");\n    } else {\n        printf("x is not equal to y\\n");\n    }\n    return 0;\n}\n\\`
```

Error: \_\_\_\_\_

**\*\*14. What is the output of the following C code?\*\***

```
```\n#include <stdio.h>\n\nint main() {\n    int x = 5;\n    if (x > 2) {\n        x = x + 10;\n    }\n}
```

```

    }
    printf("%d\n", x);
    return 0;
}
...

```

Output: _____

****15. What is the output of the following C code?****

```

...c
#include <stdio.h>

int main() {
    int a = 5, b = 3;
    int c = a & b;
    printf("%d\n", c);
    return 0;
}
...

```

Output: _____

****16. Identify the error(s) in the following C code, if any:****

```

...c
#include <stdio.h>

int main() {
    int arr[5];
    printf("%d\n", arr[5]);
    return 0;
}
...

```

Error: _____

****17. What is the output of the following C code?****

```

...c
#include <stdio.h>

int main() {
    int i;

```

```

    for (i = 0; i < 5; i++) {
        printf("%d ", i * i);
    }
    return 0;
}
...

```

Output: _____

****18. What is the output of the following C code?****

```

...c
#include <stdio.h>

int main() {
    int a = 5, b = 10;
    printf("%d\n", a > b ? a : b);
    return 0;
}
...

```

Output: _____

****19. What is the output of the following C code?****

```

...c
#include <stdio.h>

int main() {
    int arr[3] = {1, 2, 3};
    int *p = arr + 1;
    printf("%d\n", *p);
    return 0;
}
...

```

Output: _____

****20. Identify the error(s) in the following C code, if any:****

```

...c
#include <stdio.h>

int main() {

```

```

int a = 5;
if (a > 2)
    printf("a is greater than 2\n");
printf("This will always print\n");
else
    printf("This will never print\n");
return 0;
}
...

```

Error: _____

Java Section

****21. What is the output of the following Java code?****

```

```java
public class Test {
 public static void main(String[] args) {
 int a = 5;
 int b = 10;
 System.out.println(a + b);
 }
}
...

```

Output: \_\_\_\_\_

**\*\*22. What is the output of the following Java code?\*\***

```

```java
public class Test {
    public static void main(String[] args) {
        int x = 5;
        if (x > 2) {
            x += 10;
        }
        System.out.println(x);
    }
}
...

```

Output: _____

****23. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 String str = "hello";
 str = str.toUpperCase();
 System.out.println(str);
 }
}
```
```

Output: _____

****24. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int[] arr = {1, 2, 3};
 for (int i : arr) {
 System.out.print(i + " ");
 }
 }
}
```
```

Output: _____

****25. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int x = 5;
 System.out.println(x == 5 ? "True" : "False");
 }
}
```
```

Output: _____

****26. Identify the error(s) in the following Java code, if any.****

```
```java
public class Test {
 public static void main(String[] args) {
 int[] arr = new int[3];
 System.out.println(arr[3]);
 }
}
```
```

Error: _____

****27. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int x = 10;
 int y = 20;
 int z = x + y;
 System.out.println(z);
 }
}
```
```

Output: _____

****28. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int x = 10;
 int y = 20;
 int z = x > y ? x : y;
 System.out.println(z);
 }
}
```
```

Output: _____

****29. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int[] arr = {10, 20, 30};
 for (int i = 0; i < arr.length; i++) {
 arr[i] = arr[i] / 2;
 }
 for (int i : arr) {
 System.out.print(i + " ");
 }
 }
}
```
```

Output: _____

****30. Identify the error(s) in the following Java code, if any:****

```
```java
public class Test {
 public static void main(String[] args) {
 int x = 10;
 int y = 0;
 int z = x / y;
 System.out.println(z);
 }
}
```
```

Error: _____

****31. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 String str = "123";
 int num = Integer.parseInt(str);
 System.out.println(num);
 }
}
```
```

...

Output: _____

****32. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 String str1 = "hello";
 String str2 = "hello";
 System.out.println(str1 == str2);
 }
}
```
```

Output: _____

****33. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 String str1 = new String("hello");
 String str2 = new String("hello");
 System.out.println(str1 == str2);
 }
}
```
```

Output: _____

****34. Identify the error(s) in the following Java code, if any.****

```
```java
public class Test {
 public static void main(String[] args) {
 int[] arr = {1, 2, 3};
 for (int i = 0; i <= arr.length; i++) {
 System.out.println(arr[i]);
 }
 }
}
```
```


Error: _____

****35. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 for (int i = 0; i < 5; i++) {
 System.out.print(i * i + " ");
 }
 }
}
```
```

Output: _____

****36. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int a = 5;
 int b = 10;
 int c = a & b;
 System.out.println(c);
 }
}
```
```

Output: _____

****37. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int a = 5;
 int b = 10;
 System.out.println(a | b);
 }
}
```
```

Output: _____

****38. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int x = 5;
 x = x++ + ++x;
 System.out.println(x);
 }
}
```
```

Output: _____

****39. Identify the error(s) in the following Java code, if any.****

```
```java
public class Test {
 public static void main(String[] args) {
 int x = 5;
 if (x = 10) {
 System.out.println("x is 10");
 } else {
 System.out.println("x is not 10");
 }
 }
}
```
```

Error: _____

****40. What is the output of the following Java code?****

```
```java
public class Test {
 public static void main(String[] args) {
 int x = 5;
 while (x < 10) {
 x++;
 }
 System.out.println(x);
 }
}
```

```
}
...
```

Output: \_\_\_\_\_

---

### ### C++ Section

**\*\*41. What is the output of the following C++ code?\*\***

```
```cpp  
#include <iostream>  
using namespace std;  
  
int main() {  
    int a = 5, b = 10;  
    cout << a + b << endl;  
    return 0;  
}  
...
```

Output: _____

****42. What is the output of the following C++ code?****

```
```cpp  
#include <iostream>
using namespace std;

int main() {
 int x = 5;
 if (x > 2) {
 x += 10;
 }
 cout << x << endl;
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*43. What is the output of the following C++ code?\*\***

```

```cpp
#include <iostream>
using namespace std;

void func(int &ref) {
    ref = 20;
}

int main() {
    int x = 10;
    func(x);
    cout << x << endl;
    return 0;
}
```

```

Output: \_\_\_\_\_

**\*\*44. What is the output of the following C++ code?\*\***

```

```cpp
#include <iostream>
using namespace std;

int main() {
    int arr[3] = {1, 2, 3};
    for (int i = 0; i < 3; i++) {
        cout << arr[i] << " ";
    }
    return 0;
}
```

```

Output: \_\_\_\_\_

**\*\*45. What is the output of the following C++ code?\*\***

```

```cpp
#include <iostream>
using namespace std;

int main() {
    int a = 5, b = 3;
    int c = a & b;
}
```

```

```
 cout << c << endl;
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*46. Identify the error(s) in the following C++ code, if any:\*\***

```
```cpp
#include <iostream>
using namespace std;

int main() {
    int arr[3] = {1, 2, 3};
    cout << arr[3] << endl;
    return 0;
}
...
```

Error: _____

****47. What is the output of the following C++ code?****

```
```cpp
#include <iostream>
using namespace std;

class Test {
public:
 static int count;
 Test() {
 count++;
 }
};

int Test::count = 0;

int main() {
 Test t1, t2, t3;
 cout << Test::count << endl;
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*48. What is the output of the following C++ code?\*\***

```
```cpp
#include <iostream>
using namespace std;

void swap(int &a, int &b) {
    int temp = a;
    a = b;
    b = temp;
}

int main() {
    int x = 5, y = 10;
    swap(x, y);
    cout << x << " " << y << endl;
    return 0;
}
...`
```

Output: _____

****49. What is the output of the following C++ code?****

```
```cpp
#include <iostream>
using namespace std;

int main() {
 int x = 5;
 cout << (x > 2 ? x : 2) << endl;
 return 0;
}
...`
```

Output: \_\_\_\_\_

**\*\*50. Identify the error(s) in the following C++ code, if any:\*\***

```
```cpp
#include <iostream>
```

```
using namespace std;
```

```
int main() {  
    int x = 5;  
    if (x = 10) {  
        cout << "x is 10" << endl;  
    } else {  
        cout << "x is not 10" << endl;  
    }  
    return 0;  
}  
...
```

Error: _____

****51. What is the output of the following C++ code?****

```
```cpp  
#include <iostream>
using namespace std;

int main() {
 int x = 10;
 cout << --x << endl;
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*52. What is the output of the following C++ code?\*\***

```
```cpp  
#include <iostream>  
using namespace std;  
  
class Test {  
public:  
    int a;  
    Test() : a(10) {}  
};  
  
int main() {  
    Test t;
```

```
    cout << t.a << endl;
    return 0;
}
...
```

Output: _____

****53. What is the output of the following C++ code?****

```
```cpp
#include <iostream>
using namespace std;

class Test {
 int x;
public:
 Test(int a) : x(a) {}
 int getX() { return x; }
};

int main() {
 Test t(5);
 cout << t.getX() << endl;
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*54. What is the output of the following C++ code?\*\***

```
```cpp
#include <iostream>
using namespace std;

class Base {
public:
    void display() {
        cout << "Base class" << endl;
    }
};

class Derived : public Base {
public:
```



```

    void display() {
        cout << "Derived class" << endl;
    }
};

int main() {
    Derived d;
    d.display();
    return 0;
}
...

```

Output: _____

****55. Identify the error(s) in the following C++ code, if any:****

```

```cpp
#include <iostream>
using namespace std;

class Test {
 int x;
public:
 Test() : x(10) {}
 void show() {
 cout << x << endl;
 }
};

int main() {
 Test t;
 cout << t.x << endl;
 return 0;
}
...

```

Error: \_\_\_\_\_

**\*\*56. What is the output of the following C++ code?\*\***

```

```cpp
#include <iostream>

```

```
using namespace std;
```

```
class Test {  
public:  
    static int x;  
};
```

```
int Test::x = 5;
```

```
int main() {  
    Test t;  
    cout << t.x << endl;  
    return 0;  
}  
...
```

Output: _____

****57. What is the output of the following C++ code?****

```
```cpp
```

```
#include <iostream>
using namespace std;
```

```
class Base {
public:
 virtual void display() {
 cout << "Base class" << endl;
 }
};
```

```
class Derived : public Base {
public:
 void display() override {
 cout << "Derived class" << endl;
 }
};
```

```
int main() {
 Base* b = new Derived();
 b->display();
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*58. What is the output of the following C++ code?\*\***

```
```cpp
#include <iostream>
using namespace std;

class Test {
public:
    Test() {
        cout << "Constructor" << endl;
    }
    ~Test() {
        cout << "Destructor" << endl;
    }
};

int main() {
    Test t;
    return 0;
}
```
```

Output: \_\_\_\_\_

**\*\*59. What is the output of the following C++ code?\*\***

```
```cpp
#include <iostream>
using namespace std;

int main() {
    int x = 10;
    int y = x++;
    cout << y << endl;
    return 0;
}
```
```

Output: \_\_\_\_\_

**\*\*60. Identify the error(s) in the following C++ code, if any:\*\***

```

```cpp
#include <iostream>
using namespace std;

class Test {
    int x;
public:
    Test(int a) : x(a) {}
    void show() const {
        x = 20;
        cout << x << endl;
    }
};

int main() {
    Test t(10);
    t.show();
    return 0;
}
```

```

Error: \_\_\_\_\_

**\*\*61. What is the output of the following C++ code?\*\***

```

```cpp
#include <iostream>
using namespace std;

class Test {
public:
    int a;
    Test(int x) : a(x) {}
};

int main() {
    Test t1(10);
    Test t2 = t1;
    cout << t2.a << endl;
    return 0;
}
```

```

Output: \_\_\_\_\_

**\*\*62. What is the output of the following C++ code?\*\***

```
```cpp
#include <iostream>
using namespace std;

class Base {
public:
    Base() {
        cout << "Base Constructor" << endl;
    }
    ~Base() {
        cout << "Base Destructor" << endl;
    }
};

class Derived : public Base {
public:
    Derived() {
        cout << "Derived Constructor" << endl;
    }
    ~Derived() {
        cout << "Derived Destructor" << endl;
    }
};

int main() {
    Derived d;
    return 0;
}
```
```

Output: \_\_\_\_\_

**\*\*63. What is the output of the following C++ code?\*\***

```
```cpp
#include <iostream>
using namespace std;

void func() {
    static int x = 0;
```

```

    x++;
    cout << x << endl;
}

```

```

int main() {
    func();
    func();
    return 0;
}
...

```

Output: _____

****64. What is the output of the following C++ code?****

```

```cpp
#include <iostream>
using namespace std;

template <typename T>
T add(T a, T b) {
 return a + b;
}

int main() {
 cout << add(5, 10) << endl;
 cout << add(2.5, 3.5) << endl;
 return 0;
}
...

```

Output: \_\_\_\_\_

**\*\*65. Identify the error(s) in the following C++ code, if any:\*\***

```

```cpp
#include <iostream>
using namespace std;

int main() {
    int x = 5;
    int& y = x;
    y = 10;
    cout << x << endl;
}

```

```
    return 0;
}
...
```

Error: _____

****66. What is the output of the following C++ code?****

```
```cpp
#include <iostream>
using namespace std;

int main() {
 int x = 5;
 cout << &x << endl;
 return 0;
}
...

```

Output: \_\_\_\_\_

**\*\*67. What is the output of the following C++ code?\*\***

```
```cpp
#include <iostream>
using namespace std;

class Test {
public:
    Test() {
        cout << "Constructor" << endl;
    }
    ~Test() {
        cout << "Destructor" << endl;
    }
};

void func() {
    Test t;
}

int main() {
    func();
    return 0;
}

```

```
}  
...
```

Output: _____

****68. What is the output of the following C++ code?****

```
```cpp  
#include <iostream>
using namespace std;

int main() {
 int x = 5;
 int y = 10;
 swap(x, y);
 cout << x << " " << y << endl;
 return 0;
}
...
```

Output: \_\_\_\_\_

**\*\*69. What is the output of the following C++ code?\*\***

```
```cpp  
#include <iostream>  
using namespace std;  
  
int main() {  
    int arr[3] = {1, 2, 3};  
    for (int i = 0; i < 3; i++) {  
        arr[i] = arr[i] * 2;  
    }  
    for (int i = 0; i < 3; i++) {  
        cout << arr[i] << " ";  
    }  
    return 0;  
}  
...
```

Output: _____

70. Identify the error(s) in the following C++ code, if any:


```
```cpp
#include <iostream>
using namespace std;
```

```
class Test {
public:
 int x;
 Test() : x(10) {}
};
```

```
int main() {
 Test t;
 cout << t.x << endl;
 return 0;
}
...

```

Error: \_\_\_\_\_