C++ Object-Oriented Programming

In-Class Problem

```cpp
#include <iostream> // includes input/output
template <typename T> // defines template that works with any T
T maximum(T a, T b) { // function max
    return (a > b) ? a : b; // returns 'a' if a > b else 'b' Ternary
}

int main() { // main function
    int num1 = 10; // declare num1 int with value 10
    int num2 = 20; // declare num2 int with value 20
    int max_int = maximum(num1, num2); // calls template function
    std::cout << "Maximum of " << num1 << " and "
      << num2 << " is: " << max_int << std::endl; // prints results

    double dbl1 = 3.14; // declare double dbl2 to 3.14
    double dbl2 = 2.71; // declare double dbl2 to 2.71
    double max_dbl = maximum(dbl1, dbl2); // calls Template fun
    std::cout << "Maximum of " << dbl1 << " "
      and " << dbl2 << " is: " << max_dbl << // prints result
      std::endl;

    char char1 = 'a'; // declare char1 as 'a'
    char char2 = 'z'; // declare char2 as 'z'
    char max_char = maximum(char1, char2);
    std::cout << "Maximum of " << char1 << " and "
      << char2 << " is: " << max_char << std::endl; // print results

    return 0;
}
```

1. Add a comment on every line explaining what the C++ code is doing.
2. What is the output?

2. Maximum of 10 and 2o is: 20

3. Maximum of 3.14 and 2.71 is: 3.14

4. Maximum of a and z is : z