Class Test 5 Memo (17 marks)

1. Which of the following is implicit type casting: (1)

    a. `int a = (int)5.75;`
    b. `float b = 7;`
    c. `int c = static_cast<int>(4.5);`
    d. `char d = 'A';`

2. What would the output be: (1)

```
int a = 10;
float b = 4.0;
cout << a / b;
```

    a. 2
    b. 2.5
    c. 2.0
    d. 2.25

3. What would the output be: (1)

```
int x = 3;
double y = 3.5;
cout << x + y;
```

    a. 6
    b. 6.5
    c. 7
    d. Error

4. Can a float be implicitly converted to an int: (1)
    a. Yes
    b. No

5. What is the most suitable data type to store the distance between two cities (in kilometers with decimal precision)? (1)

    a. int
    b. float
    c. double
    d. char
    e. bool
    f. String

6. What will be the output: (1)

```
char letter = 'C';
int ascii_value = letter;
cout << ascii_value;
```

    a. 67
    b. ‘C’
    c. 3
    d. Error

7. What data type would be appropriate to determine if a student passed or failed? (1)

    a. int
    b. float
    c. double
    d. char
    e. String
    f. bool

8. What data type would be appropriate for a student number? (example: u1975321) (1)

    a. int
    b. float
    c. double
    d. char
    e. bool
    f. String

9. Explain the difference between explicit and implicit type conversion and provide examples in pseudo-code. (5)

    Implicit type conversion occurs when the compiler converts 1 data type to another without the programmer directly specifying it where as with explicit the programmer specifies the casting/conversion.

10. Explain why an int can be implicitly converted to a float but a float can not be implicitly converted to an int. (4)

    An int can be implicitly converted to a float because a float can represent all integer values without losing precision. However, a float cannot be implicitly converted to an int because the conversion might lead to a loss of information due to rounding or truncation of the decimal part.