EAST WEST UNIVERSITY
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Quiz 2, Fall 2024 Semester

Course: **CSE430, Section 1, Software Quality Assurance and Testing**
Instructor: **Anika Tabassum, Lecturer, CSE Department**
Full Marks: **20 (Will be converted to 10)**
Time: **40 Minutes**

Note: There are **Two** questions, answer ALL of them. The Mark of each question is mentioned at the right margin.

1. #include <stdio.h>   [CO3,C3, Mark: 6+4+4 = 14]

    void determineTriangleType() {

    1. int a, b, c;
    2. printf("Enter three sides of a triangle: ");
    3. scanf("%d %d %d", &a, &b, &c);

    4. if (a <= 0 || b <= 0 || c <= 0) {
    5.   printf("Invalid sides, all sides must be positive.\n");
    6.   return;
    7. }

    8. if (a + b > c && a + c > b && b + c > a) {
    9.   if (a == b && b == c) {
    10.   printf("Equilateral Triangle\n");
    11.   } else if (a == b || b == c || a == c) {
    12.   printf("Isosceles Triangle\n");
    13.   } else {
    14.   printf("Scalene Triangle\n");
    15.   }

    16.   // Additional decision to check if it's a right triangle
    17.   if ((a * a + b * b == c * c) || (a * a + c * c == b * b) || (b * b + c * c == a * a)) {

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18.        printf("It is also a Right Triangle\n");
19.      }
20.  } else {
21.      printf("Not a Triangle\n");
22.  }

23.  // Additional decision to check if it's a large triangle
24.  if (a > 100 || b > 100 || c > 100) { // Decision 8
25.      printf("This is a large triangle with at least one side > 100.\n");
26.  }

27.  return 0;
28. }
```

a) Find the cyclomatic complexity of the given code using two methods.
b) Find all du pairs, c-use and p-use of the given code.
c) Define the independent paths.

2 You are testing a payment gateway system where: [CO2, C3, Mark: 6]

1. The transaction amount (an integer) must fall within the valid range of $1 to $50,000.
   - Divide this into three groups:
     - Small transactions: $1–$1,000
     - Medium transactions: $1,001–$10,000
     - Large transactions: $10,001–$50,000
2. The currency type (a string) must be one of the following: "USD" or "EUR".

Design test cases of valid and invalid classes using **Domain Testing Technique**.