Q1. Which scenario best exemplifies a one-to-one association in a C++ program?

A) A 'Student' and a 'LibraryCard'
B) A 'Teacher' and a 'Classroom'
C) A 'Doctor' and 'Patient'
D) A 'Bus' and 'Route'

Q2 In a school management system, which class relationship represents a one-to-many association?

A) A 'School' and 'Teacher'
B) A 'Book' and 'Library'
C) Both A and B
D) Neither A nor B

Q3 Multiple 'Students' enrolled in a single 'Course' exhibits which relationship?

A) 1 - 1
B) 1 - N
C) M - N
D) None of the above

Q4 A application has a 'Customer' class and an 'Order' class. If every Order can only belong to one Customer, but a Customer can place many orders, this relationship is:

A) One-to-one
B) One-to-many
C) Many-to-one
D) Both B & C

Q5 In a university enrollment system, which scenario illustrates a many-to-many association?

A) A Professor and Courses.
B) A Department and Labs.
C) A Library and Books.
D) None of above

Object Oriented Programming

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Q6 In a C++ program modeling an airport, which of the following is an example of aggregation?

(A) Airplane and Engine - the airplane contains engines, but engines can be swapped out or used in different airplanes.
(B) Pilot and Flight - a flight cannot exist without a pilot.
C) Ticket and Passenger - a ticket is issued to a specific passenger.
D) Airport and Runway - an airport controls the existence of runways.

Q7 A Team consists of Players, and if the team is disbanded, the players still exist and can join other teams. This scenario is example of:

A) Inheritance

C) Aggregation

B) Composition

D) Encapsulation

Q8 What is the primary reason to overload operators in C++?

A) To increase the execution speed of programs.
B) To provide syntactic convenience and readability when using user-defined types.
C) To change the functionality of built-in operators for primitive types.
D) To reduce memory usage by customizing operator behavior.

Q9 To overload the + operator for a class Vector, which signature is correct?

A) Vector operator+(const Vector&);
B) friend Vector operator+(const Vector&, const Vector&);
C) static Vector operator+(const Vector&, const Vector&);
D) Both B & C

Q10 Aggregation is a special form of association that illustrates a/an _____ relationship between the whole and its parts.

A) is-a
B) has-a
C) uses-a
D) none