Bahria University



*Lahore Campus*

# Quiz-2 (SPRING-2025 Semester)

*Department of Computer Sciences*

**Information Security**

**Program/Semester: BSCS 8 A Max Marks: 2.5**

**Instructor Name:** Dr. Nadeem Sarwar **Time Allowed : 30 min**

### **Open Book Quiz Statement**

**Course:** Information Security  
**Topic Focus:** Database Security  
**CLO:** Identify appropriate techniques to tackle and solve problems in the discipline of information security.

#### **Instructions:**

* This is an open-book quiz; you may refer to textbooks, notes, and online resources.
* You are required to demonstrate understanding by applying appropriate techniques to solve real-world database security challenges.
* Use diagrams or pseudocode where applicable to support your answers.
* Submit your answers by [Insert Deadline].

**Q1. [SQL Injection]**  
You are hired as a security analyst to audit a web application connected to a backend database. During testing, you input the following into a login form:

sql

' OR '1'='1

a) Explain what type of vulnerability this input reveals.  
b) Describe **two** techniques that can be used to **prevent** this kind of attack in a modern database-backed application.  
c) Suggest an appropriate mitigation plan to fix this issue in the given scenario.

**Q2. [Encryption and Auditing]**  
You are tasked with improving the security of a hospital database storing patients’ medical records.  
a) Explain how **data-at-rest** and **data-in-transit** encryption can protect sensitive information.  
b) Describe what kind of auditing mechanisms should be implemented to ensure compliance and detect suspicious activities.  
c) Propose an integrated approach that uses both encryption and auditing to enhance database security.