1. John is developing a hospital management system. Patient health records must be kept

private, but doctors should be able to access them through authorized methods.

Question: Which principle should John use to protect sensitive patient data?

Answer: **Encapsulation** – Patient data is kept private, and only authorized methods (doctors via secure access) can interact with it.

2. Maria is creating a ride-booking app. Users can book a ride with just one click,

without needing to know how GPS tracking, driver assignment, and payment

processing happen in the background.

Question: Which OOP principle does this scenario illustrate?

Answer: **Abstraction** – Users don’t see or worry about the internal complexities (GPS, payment, assignment), they only see the simple interface of booking with one click.

3. David is working on a UPI payment app. Users can send money with just a click

(without seeing internal bank communications). At the same time, their account PIN

and details are stored securely and cannot be accessed directly.

Question: Which two OOP concepts are applied in this system?

Answer: **Abstraction** – Users just click to send money, internal banking processes are hidden.  
**Encapsulation** – Sensitive data (PIN, account details) is kept private and cannot be accessed directly.

**Which of the following implementations correctly satisfies the above requirements?**

B. The program correctly uses private fields and public methods to interact with the object&#39;s

state. The validation logic in borrowBook and returnBook methods ensures data integrity.