**Air University  
Mid Semester Examinations: Spring 2025**

Student ID: \_\_\_\_\_\_\_\_\_\_



**Subjective Part   
(To be solved on Answer Books only)**

**Subject:** Object Oriented Programming **Class:** BSCYS

**Section(s):** A  
**Course Code:** CS-112**Time Allowed:** \_\_60\_\_\_\_ Minutes

**Max Marks: 100  
FM’s Name: Sheikh Qaisar Ayyub**  
**FM’s Signature:­**

**INSTRUCTIONS**

* Attempt responses on the answer book only.
* Nothing is to be written on the question paper.
* Rough work or writing on question paper will be considered as use of unfair means.
* Tables / calculators are allowed / not allowed.

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|  | **Q. No. 1 (CLO 1)** | **15 Marks** |
|  | **Fighter Jet System**  You are designing a **Fighter Jet System** to manage different aspects of a jet used in military operations. The system should include **three standalone classes** to handle different functionalities.  **Question:**  Design a **C++ program** with **three classes** (**JetSpecifications, JetOperations, and JetWeapons**) to manage a fighter jet. Each class should have **two attributes and two methods** representing its behavior.  **Class 1: JetSpecifications** (Stores technical details of the jet) ✔ **Attributes:**   * model (Fighter jet model name) * maxSpeed (Maximum speed in km/h)   ✔ **Methods:**   * displaySpecs() – Displays the jet's model and speed. * setJet(int model, int maxSpeed) – Updates the maximum speed.   **Class 2: JetOperations** (Handles flight operations) ✔ **Attributes:**   * int altitude (Current flying altitude in feet) * int fuelLevel (Current fuel level in liters)   ✔ **Methods:**   * takeOff() – cout<<” fighter jet taking off” * land() – cout<<” Figher jet landing”. * setOperation(int altitude, int fuel\_level) * getOperation(); display operations   **Class 3: JetWeapons** (Manages jet weapon systems) ✔ **Attributes:**   * Int missiles (Number of available missiles) * Int machineGunAmmo (Rounds of machine gun ammunition)   ✔ **Methods:**   * fireMissile() – Reduces missile count by one when fired. * reloadAmmo(int bullets) – Adds bullets to the machine gun ammo.   **Your Task:**   1. **Write a C++ program** implementing the three classes. 2. **Ensure that each class operates independently** (no inheritance required). 3. **Create objects of all three classes**, call their methods, and display outputs. |  |