National University of Computer and Emerging Sciences, Lahore Campus

Course:	Software Design and Analysis	**Course Code:**	CS-3004
Program:	BS (Computer Science)	**Semester:**	Fall 2023
Duration:	30 Minutes	**Total Marks:**	20
Quiz Date:	6-Nov-23	**Roll No.**	
Section:	BCS-5K	**Name:**	

Question 1) Define Coincidental Cohesion and Functional Cohesion along with examples.   (10)

Question 2) Refactor the code by applying SOLID Principles and mention which SOLID principle is violated by this code? (10 Marks)

```cpp
class SingingMermaidAction {
public:
  void sing() {
     cout << "Sings melodious songs." << endl;
  }
  void combHair() {
    cout << "Combs hair with a fork." << endl;
  }
  void collectPearls() {
    cout <<" Collects shiny pearls from sea" << endl;
  }
};
int main() {
  SingingMermaidAction mermaid();
  cout << "Mermaid's Actions:" << endl;
  mermaid.sing();
  mermaid.combHair();
  mermaid.collectPearls();
}
// SRP is violated in this code
```

```cpp
class SingingMermaidAction {
public:
  void sing() {
     cout << "Sings melodious songs." << endl;
  }
}
class CombHairAction {
public:
  void combHair() {
    cout << "Combs hair with a fork." << endl;
  }
}
class CollectPearlsAction {
public:
  void collectPearls() {
    cout <<" Collects shiny pearls from sea" << endl;
  }
}
int main() {
  SingingMermaidAction singMermaid();
  CombHairAction combHairMermaid();
  CollectPearlsAction collectPearlsMermaid();
  cout << "Mermaid's Actions:" << endl;
  singMermaid.sing();
  combHairMermaid.combHair();
  collectPearlsMermaid.collectPearls();     }
```