



**DEPARTMENT OF COMPUTER SYSTEM ENGINEERING**

**UNIVERSITY OF ENGINEERING & TECHNOLOGY PESHAWAR**

**3<sup>rd</sup> Semester FALL 2022**

**Assignment # 3**

**Max Marks: 30 Marks**

**Due Date: Within Class on Thursday 19<sup>st</sup> January 2023**

**Plagiarism Policy:**

Plagiarism is strictly not allowed. Any case of plagiarism will get zero marks.

Q. 1: (CLO3)

Let us model a class **Set**. A set contains a number only once. Create a class **Set** that has an array of 50 members. This set can have values in the range 0-49. If a number is present in Set, the value of array element at that index is 1. Otherwise a 0 is stored.

1. Write a no-argument constructor that initializes the set to empty (All the array elements are 0).
2. Write a function **insert()** to add a value in the set. (set that index element to 1)
3. Write a function **delete()** to remove a member from the set. (set that index element to 0)
4. Write an overloaded operator + function to find the union of two sets.
5. Write an overloaded operator \* to find the intersection of two sets.
6. Write an overloaded operator ~ to find the complement of a set.
7. Write a display function to display the contents of a set.

**Note: All your answers to the questions posed in the assignment should be organized as a word document that you would submit along with the C++**

**code. The document should also discuss your implementation strategy.**