CHAPTER-9

CONCLUSION

The main aim of the present work is to study continuity, separation axioms, covering axioms with the help of generalized intuitionistic fuzzy open sets.

A. In the present study, the following mappings are introduced and studied

1. IF Strongly $\alpha$-continuous mappings
2. IF $\alpha$-irresolute mappings
3. IF Strongly $\alpha$-irresolute mappings
4. IF Strongly semi $\alpha$-irresolute mappings
5. IF ap-semi open mappings
6. IF pre semi open mappings
7. IF contra pre semi open mappings
8. IF Contra $\beta$-continuous mappings and
9. IF Contra Strongly $\beta$-continuous mappings.
We have investigated the relationships between the new mappings with other known mappings already in the literature. Few such relations are

(i)

```
\begin{align*}
\text{IF strongly } \alpha\text{- irresolute} \\
\text{IF-continuity} & \quad \text{IF } \alpha\text{- irresolute} \\
\text{IF } \alpha\text{- continuity} & \quad \text{IF strongly semi } \alpha\text{- irresolute} \\
\text{IF strongly } \alpha\text{-continuity} & \quad \text{IF semi-continuity}
\end{align*}
```

(ii) IF contra pre semi open mapping \quad IF pre semi open mapping

```
\begin{align*}
\text{IF contra pre semi open mapping} & \quad \text{IF pre semi open mapping} \\
\downarrow & \quad \downarrow \\
\text{IF ap- semi open map} & \quad \text{IF ap- semi open map}
\end{align*}
```

(iii) IF contra continuity

```
\begin{align*}
\text{IF contra continuity} \\
\downarrow \\
\text{IF contra strong } \beta\text{-continuity} \\
\downarrow \\
\text{IF contra } \beta\text{-continuity}
\end{align*}
```

The converses are not true in general.
B. We have introduced the following generalized IF sets for studying the new separation axioms and covering axioms.

1. IF Pre Semi-closed sets
2. IF $g^*$-closed sets
3. IF Semi $g^*$-closed sets and
4. IF strongly $\beta$-open sets.

We have investigated the relationships between the new concepts with other known concepts already in the literature. Few such relations are

(i)

```
IF regular closed set
    ↓
IF closed set
    ↓
IF W-closed set
    ↓
IF $g^*$-closed set
    ↓
IF rg-closed set
```

```
IF $g^*$-closed set
    ↓
IF g-closed set
    ↓
IF semi closed set
```

```
IF g-closed set
    ↓
IF sg*-closed set
   ↓
IF sg-closed set
```

```
IF semi closed set
    ↓
IF gs-closed set
```

```
IF rg-closed set
    ←
```

```
IF sg-closed set
    ←
```
(ii) IF semi pre closed set IF pre semi closed set

IF generalized semi pre closed set

The converses are not true in general.

C. Utilizing these new sets we have introduced and studied the following separation axioms and covering axioms.

1. Pre Semi separation axioms,
2. $T_\alpha$-separation axioms
4. IF Strongly $\beta$-compactness.
5. IF countable strongly $\beta$-compactness.
6. IF S-closed space.
7. IF countable strongly S-closed space.

D. IF set theory plays an important role for its application in different branches of science and technology including medical sciences. Now we may hope that the concepts introduced in the present work will play the similar role.