LIST OF SYMBOLS

\( \subseteq \) subset
\( \supseteq \) superset
\( \subset \) proper subset
\( \supset \) proper superset
\( \emptyset \) the empty set
\( \in \) belongs to
\( \notin \) does not belong to
\( \lor \) maximum or supremum
\( \land \) minimum or infimum
\( \cup \) union of sets
\( \cap \) intersection of sets
0 the additive identity of a ring or the integer '0'
1 the multiplicative identity of a ring or the integer '1'
e the identity of the group
\( \theta \) the zero element of module
\([0,1]^X\) all fuzzy subsets of X
\( M \setminus N \) set difference
\( \mu^c \) the complement of \( \mu \)
\( \mu^{-1} \) the inverse of \( \mu \)
\( \mu^* \) \( \mu^* = \{x|x \in X, \mu(x) > 0\} \), the support of \( \mu \)
\( \mu_* \) \( \mu_* = \{x \in G|\mu(x) = \mu(e)\} \), where \( G \) is a group
\( \mu_t \) \( \mu_t = \{x|x \in X, \mu(x) \geq t\} \), level subset of \( \mu \)
\( f(\mu) \) image of \( \mu \) under \( f \)
\( f^{-1}(\mu) \) inverse image of \( \mu \) under \( f \)
\( \mu \delta \) the product of \( \mu \) and \( \delta \)
\(\mu + \delta\) the sum of \(\mu\) and \(\delta\)

\(\mu - \delta\) the difference of \(\mu\) and \(\delta\)

\(-\mu\) the negative of \(\mu\)

\(< \mu >\) the fuzzy subset of \(X\) generated by \(\mu\)

\(\chi_A\) characteristic function on \(A\)

\(x_t\) fuzzy point

\(F(G)\) the set of all fuzzy subgroups of \(G\).

\(NF(G)\) the class of normal fuzzy subgroups of \(G\)

\(\mu < \delta\) \(\mu\) is a normal fuzzy subgroup of \(\delta\)

\(F(R)\) the set of all fuzzy subrings of \(R\)

\(FI(R)\) the set of all fuzzy ideals of \(R\)

\(F(M)\) set of all fuzzy submodules of \(R\)-module \(M\)

\(l(a)\) left annihilator of \(a\)

\(r(a)\) right annihilator of \(a\)

\(\text{ann}(a)\) annihilator of \(a\)

\(\mu \subseteq e \nu\) \(\mu\) is essential in \(\nu\)

\(\mu \subseteq e(T) \nu\) \(\mu\) is \(T\)-fuzzy essential in \(\nu\)

\(\mu : \nu\) \(\mu : \nu = \bigcup \{\eta | \eta \in [0,1]^R, \eta \nu \subseteq \mu\}\), residual quotient