Answers

Question 2:
(Use mathematical notation, such as r^+, rather than code, such as `PLUS(r)`)

$mkeps([c_1, c_2, \ldots, c_n]) \stackrel{\text{def}}{=}$ not nullable

$mkeps(r^+) \stackrel{\text{def}}{=}$ ~~Plus (mkeps (r))~~ Plus([mkeps(r)])

$mkeps(r^?) \stackrel{\text{def}}{=}$ Empty

$mkeps(r^{\{n\}}) \stackrel{\text{def}}{=}$ if n=0 NTimes[] else NTimes [mkeps (r)]

$inj\,([c_1, c_2, \ldots, c_n])\,c \stackrel{\text{def}}{=}$ Empty Char c

$inj\,(r^+)\,c \stackrel{\text{def}}{=}$ Seq (v, Stars vs) Plus (inj (r) c v::vs)

$inj\,(r^?)\,c \stackrel{\text{def}}{=}$ Opt (inj (r) c v)

$inj\,(r^{\{n\}})\,c \stackrel{\text{def}}{=}$ Seq (v, NTimes vs) if n=0 Empty else NTimes (inj (r) c v::vs)

Tokens for `"read n;"`

k : "read"
w : " "
i : "n"
s : ";"