Grammar

$$egin{aligned} J &
ightarrow H \mid A \ H
ightarrow h P_H \mid h t R_H \mid h f F_A \mid h o I_A \ A
ightarrow a P_A \mid a t R_A \mid a f F_H \mid a o I_H \ P_H
ightarrow x H \mid s B_H \mid y A \ P_A
ightarrow x A \mid s B_A \mid y H \ I_H
ightarrow i H \mid i A \mid I_A \ I_A
ightarrow i A \mid i H \mid I_H \ B_H
ightarrow m I_A \mid n r H \mid n r A \mid n o I_A \mid n F_H \mid m F_H \mid m \mid n \ B_A
ightarrow m I_H \mid n r H \mid n r A \mid n o I_H \mid n F_A \mid m F_A \mid m \mid n \ R_H
ightarrow b H \mid g I_H \ R_A
ightarrow b A \mid g I_A \ F_H
ightarrow I_H \mid F_H \mid s B_H \ F_A
ightarrow I_A \mid F_A \mid s B_A \end{aligned}$$