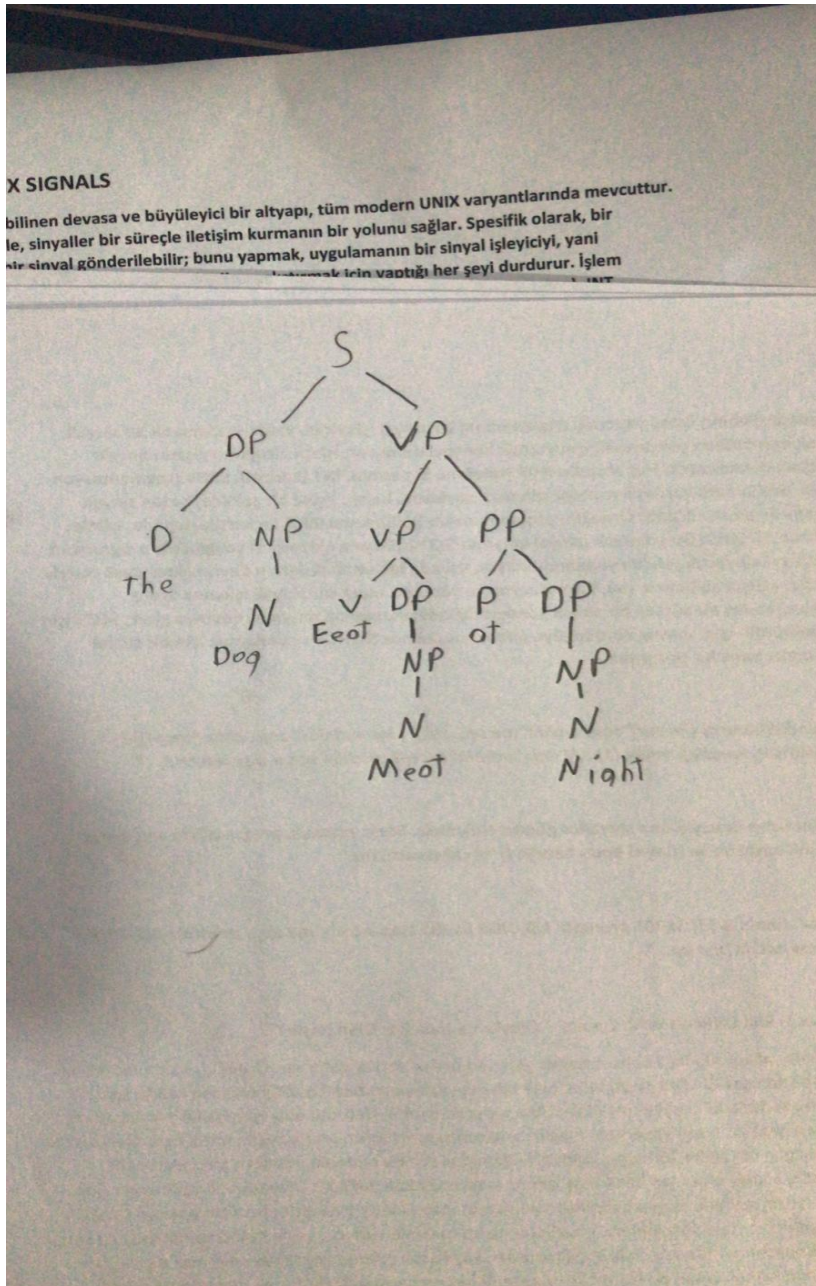# Natural Language Processing Final Exam

Q1) The dog eat meat at night

Q2)

Q3)

%%% GRAMMAR

:- op(1000, xfy, ==>).

% LEXICON

d ==> [the].

p ==> [at].

n ==> [dog].

n ==> [meat].

n ==> [night].

v ==> [eat].

% PHRASE STRUCTURE RULES

s ==> dp, vp.

vp ==> v, dp.

vp ==> vp, pp.

pp ==> p, dp.

dp ==> d, np.

dp ==> np.

np ==> n.

%% SHIFT-REDUCE PARSER

% Base

sr_parse([s], []).

% Shift

```
sr_parse(Stack, [Word|Words]):-
  (Cat ==> [Word]),
  sr_parse([Cat|Stack], Words).
```

```prolog
% Reduce

sr_parse([Y,X|Rest], String):-
    (Z ==> X, Y),
    sr_parse([Z|Rest], String).


sr_parse([X|Rest], String):-
    (Y ==> X),
    sr_parse([Y|Rest], String).


?- sr_parse([],[the, dog, eat, meat, at, night]).
```