FINAL EXAM

**COMPILER CONSTRUCTION**

(90 minutes- Open book)

**Question 1**

Show any KPL program that has error “Invalid Term” and explain why the error occurs.

**Question 2**

Rewrite function readIdentKeyword and relevant functions to satisfy the new rule for identifiers:

* Identifiers are made up of letters and digit, begin with a letter; spaces are allowed, but an identifier with spaces must be enclosed in a pair of square brackets ([])
* Upper and lower case letters are distinct
* Only the first 15 characters are significant.
* Keywords are reserved: you can’t use them as name of objects like variables, constants....

**Question 3**

Given the syntax rules for term2

<Term2> ::= SB\_TIMES <Factor> <Term2>

<Term2> ::= SB\_SLASH <Factor> <Term2>

<Term2> ::= ε

Prove that the rules satisfy LL(1) conditon

**Question 4**

Read the following KPL procedure carefully and check if it has any error.

Which type of error does it have (lexical, syntax, semantic)?

Explain the reason of the error.

PROCEDURE HANOI(N:INTEGER; S:INTEGER; Z:INTEGER);

VAR   
 HANOI: INTEGER;

BEGIN

IF N != 0 THEN

BEGIN

CALL HANOI(N-1,S,6-S-Z);

I:=I+1;

CALL WRITELN;

CALL WRITEI(I);

CALL WRITEI(N);

CALL WRITEI(S);

CALL WRITEI(Z);

CALL HANOI(N-1,6-S-Z,Z)

END

END;