S(1)(a) Explain the phases of Compilation for the following assignment statement:

Position = initial + rate * 60.

(b) Construct an NFA from the following regular expression using regular expression using epsilon (ϵ).

$$(a|b)^* a b b$$

(c) Closure & Converet the following to equivalent DFA.

$$(a|b)^* a bb$$

S(2)(a) Draw the block diagram of language Processing system & briefly explain it.

(b) Explain the several issues in the design of a code generator.

S(3)(a) Construct DFA for the following regular expression:

$$(a|b)^* a (a|b)$$

(b) Explain the reason of separating analysis phase of compilation into lexical analysis & Parsing.

S(4)(a) What is the function of symbol table? Difference between token & lexeme.

(b) Difference between (Compiler & Interpreter)

S(5)(a) Write the role of lexical analyzer.

(b) Draw the transition diagram for the DFA accepting all string with substring [01] & check for the string [100011].