Compiler Design Assignment -4

1. Explain the structure of LEX program in detail by clearly describing various LEX functions and LEX variables. Also write a LEX program to generate tokens for various constructs of C language.
2. How LALR parsing is different from SLR parsing? Show that the following grammar is LR (1) but not LALR (1).

   S→Aa | bAc | Bc | bBa
   A→d
   B→d
3. Explain activation trees and structure of activation record with an example.
4. Explain in detail the issues involved in the design of code generator. Also explain the various instructions and addressing modes for a simple target machine model used in code generation.
5. Explain the concept of peephole optimization and describe its characteristics in detail.