1. (a) Explain the features of object oriented programming.
   (b) Write BNF description for arithmetic expressions which implements the Operator hierarchy of any imperative language. [6+10]

2. (a) Compare the FORTRAN computed GOTO with Pascal case statements especially in terms of reliability.
   (b) Rewrite the following code segment using a loop structure in the following languages
   i. Pascal
   ii. Ada
   
   ```
   k:=(j+13)/27;
   loop:
   if k > 10 then goto out
   k:= k+1.2
   I=3*k-1;
   goto loop
   out : ...
   ```
   Assume all Variables and constants are floating point type [6+10]

3. (a) What are the advantages and disadvantages of language supporting name equivalence and structural equivalence.
   (b) Dynamic type binding is closely related to implicit dynamic variables. Explain their relation ship. [8+8]

4. (a) Explain the importance of scope in a programming language.
   (b) How display is used during runtime. [8+8]

5. Discuss the general features of procedures and the various parameter passing mechanisms. [16]

6. (a) Discuss the data abstraction in MODULA.
   (b) Describe abstract data types with suitable examples. [8+8]

7. Discuss how producer-consumer problem is solved in:
   (a) concurrent-Pascal
8. (a) Represent the following statements as a rule in PROLOG
   X is brother of Y if X is male, X parents are M (mother) and F (father) and
   Y parents are also same.

(b) Explain the following in PROLOG with examples.
   i. fact.
   ii. functor.
   iii. conjunction.
   iv. question.