1(a) Explain Syntax & Semantic rules of a Programming language
(b) Define the term strong type checking, widening & narrowing.
(c) What is Generic subprogram? Explain with the help of an example.
(d) How you convert infix expression to postfix & infix to prefix form, explain with an example. (5*4=20)

SECTION-A

2(a) Discuss the Characteristics of Good Programming language. (10)
(b) Explain the working of an Interpreter (7)
(c) Explain Logic programming paradigm with its key features (3)

3(a) What is a Compiler? Explain in detail. Write down the difference between Compiler & Interpreter. (10)
(b) Discuss the terms Type checking & Type conversion. How will you differentiate them. What are the advantages & disadvantageous of dynamic and static type checking? (10)

4(a) Define a subprogram with its specification. Explain how an activation record created on the invocation of a subprogram. (10)

(b) Discuss the following:-
   i. Encapsulation.
   ii. Information Hiding
   iii. Data abstraction
   iv. Inheritance
   v. Prologue & Epilogue

SECTION-B

5(a) Explain the concept of recursive subprogram sequence control. Also Differentiate between implicit & explicit sequence control. (10)
(b) Explain the concept of Exceptions & Exception handling (7)
(c) What are co-routines. Explain (3)

6. Explain the heap storage management for fixed & variable size elements. (20)

7(a) For an Elementary data type in a language, do the following
   (i) Describe set of values that data objects of that type may contain
   (ii) Define syntactic representation used for constants of that language.
   (iii) Determine whether static or Dynamic type checking is used to determine the validity of each use of each operation of the type?
(b) Distinguish between functional & Imperative approach. (10)