**(3 Hours)**                                          **(Total Marks: 80)**

**N.B.:**  **1. Question No.1 is compulsory.**
       **2. Answer any three out of remaining questions.**
       **3. Assume suitable data if necessary.**
       **4. Figures to the right indicate full marks.**

**Q6.**    Solve any four                                                      **(20)**

       a)  Compare Static Scoping vs. Dynamic Scoping
       b)  Explain Inheritance in OOP
       c)  How to choose a programming language?
       d)  Explain Types of binding in Programming Languages

**Q2.**   a) Explain database manipulation commands in Prolog with an example.    **(10)**

      b) Explain different storage allocation mechanisms.               **(10)**

**Q3.**   a) What do you mean by Programming Paradigm? Explain with example the difference
      between declarative and imperative programming paradigm.         **(10)**

      b) What are Scripting Languages? Explain characteristics of scripting languages.  **(10)**

**Q4.**   a) What is logic programming? Explain Facts and Rules along with an example.  **(10)**

      b) Discuss Call by value vs. Call by reference.                   **(10)**

**Q5.**   a) Explain Type and Type classes in Haskell.                  **(10)**

      b) Explain encapsulation. How does it differ from abstraction?      **(10)**

**Q6.**   a) What is the role of an Exception Handler in a programming language? Briefly
        explain important tasks it performs.                   **(10)**
      b) Explain the life cycle of a thread with neat labeled diagram.      **(10)**

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