

(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.

- Q1.** a) Explain the difference between Declarative and Imperative Paradigms (05)
b) Explain List comprehension in Haskell with suitable examples (05)
c) What is scope and what are the scope rules? (05)
d) Write prolog code to find factorial of a number (05)
- Q2.** a) Explain database manipulation commands in Prolog with an example. (10)
b) Explain different storage allocation mechanisms. (10)
- Q3.** a) What is type checking? Also explain the difference between type equality, type compatibility and type inference with suitable programming examples. (10)
b) What is pattern matching and gated expressions in Haskell? Explain with an example. (10)
- Q4.** a) What is logic programming? Explain Facts, Rules and Query along with an example. (10)
b) Explain use of various list processing functions in the prelude environment of Haskell? (10)
- Q5.** a) Explain Type and Type classes in Haskell. (10)
b) Explain different storage allocation mechanisms. (10)
- Q6.** Short note on: (Any 4) (20)
a) Lambda Function
b) Shallow v/s Deep Comparison
c) Backtracking in Prolog Programming
d) Stacking versus Dynamic scoping
e) Types of binding in Programming Languages