

SE Sem III (Scheme) / Nov 2025 / 24-11-25

Branch: IT

QP code: 98145

(Time: 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.

- Q. 1 (a) What are the different programming paradigms? [05]
(b) What are the different problem domains of scripting languages? [05]
(c) Explain List comprehension in Haskell with suitable examples [05]
(d) Explain function overloading as one of the types of Polymorphism using suitable examples. [05]
- Q. 2 (a) Differentiate between static and dynamic binding with a suitable programming example using C++ or Java [10]
(b) Explain unification and resolution in logic programming with suitable example [10]
- Q. 3 (a) What is type checking? Also explain the difference between type equality, type compatibility and type inference with suitable programming example. [10]
(b) What are different types of Inheritance in OOP [05]
(c) Explain how lists are used in Prolog with suitable example [05]
- Q. 4 (a) What are the parameter passing methods? Explain each with suitable examples. [10]
(b) Write a program in Haskell to find factorial of a number using recursion [05]
(c) What is the horn clause in predicate logic? Explain what are facts and rules in logic programming? [05]
- Q. 5 (a) What is exception handling? What is the difference between checked and unchecked exceptions? Explain with suitable examples. [10]
(b) What is the need of synchronization in multi-threading? Write a demonstrative program in Java to explain how multiple threads are executed [10]
- Q. 6 Write short note on (Any 4) [20]
(a) Lambda functions
(b) Shallow and deep comparison
(c) Polymorphism
(d) Innovative features of scripting languages
(e) Database manipulation in Prolog
