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## MCADD-502

### M.C.A. (Integrated), V Semester

Examination, November 2023

### Principles of Programming Language

*Time : Three Hours*

*Maximum Marks : 70*

**Note:** i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Discuss the important factor that influences the evolution of Programming Language.  
b) What do you mean by compilation? Discuss briefly the various stages use in compilation.
2. a) Write down a BNF grammar for the language composed of all binary numbers that contain atleast three consecutive 1s (e.g. 0011101011).  
b) Differentiate between compile time binding and run time binding.
3. a) What is conditional statement and also write one example?  
b) Discuss the design issues of subprogram and operations.
4. a) What is encapsulation and data hiding? Explain with suitable example.  
b) What is Logic Programming? Explain it with respect to relation, rules, facts and queries.



5. a) Explain functional programming with suitable example.  
b) What is concurrency? Discuss various categories of concurrency.
6. a) What is monitor? What are advantages and disadvantages over semaphores?  
b) Write a brief notes on generic sub-programs.
7. a) Describe the similarities and difference between context free grammars and tree grammars.  
b) What are the arrays and variant records? How they differ from the conventional array and records?
8. Write short notes on the following:
  - i) Semaphore
  - ii) 4GL
  - iii) Garbage collection
  - iv) Scope and life time of variable

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