

Roll No.

Total Pages : 3

MCA/M-18

10503

PRINCIPLES OF PROGRAMMING LANGUAGES

Paper : MCA-14-23

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *five* questions in all. Q. No. 1 is compulsory. In addition to that attempt *four* more questions selecting exactly *one* question from each unit.

Compulsory Question

1. (a) Differentiate between compile-time and run-time binding.
- (b) What do you mean by scope and lifetime of variables?
- (c) What is regular grammar?
- (d) Discuss the need of object-oriented programming.
- (e) Name the various stages in translation.
- (f) What do you mean explicit sequence control?
- (g) Comment on the need of scripting languages.
- (h) What are various storage management? (8×2=16)

UNIT-I

2. (a) Each programmer has its own preference for using a programming language. What are the reasons for this?

8

(b) What do you mean by syntax? Explain BNF and Context-free grammar in brief. 8

3. What do you mean by parsing? Explain various types of parsing using suitable examples for each type of parsing. 16

UNIT-II

4. (a) Describe concept of type checking and type conversion in various languages with suitable examples. 8

(b) What is Chomsky hierarchy? Explain in detail. 8

5. (a) What is a finite-state automaton? Explain deterministic and non-deterministic FSA using suitable examples. 10

(b) Write a short note on program verification and validation. 6

UNIT-III

6. Differentiate between following :

(a) Inheritance and polymorphism.

(b) Object-oriented programming and procedural programming.

(c) Data abstraction and information abstraction. 16

7. (a) How the sequence control can be done within an expression? Explain using suitable examples. 8

(b) What is a recursive subprogram? How it is handled using stacks? Explain. 8

UNIT-IV

8. (a) What are different parameter passing methods? Discuss with examples. 8
- (b) How exceptions are handled in programming languages? Explain in brief. 8
9. Write short notes on the following :
- (a) Coroutines.
- (b) Distributed processing.
- (c) XML. 16

