10651

MCA/M-16
SYSTEM PROGRAMMING
Paper : MCA-14-21
(Group-I)
Opt. (i)

Time Allowed: 3 Hours Maximum Marks: 80

Note: Attempt five questions in all. Question No. 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. Answer in short.
   (a) What is the difference between Open subroutine and Closed subroutine?
   (b) What is Dirty programming?
   (c) Define Macro.
   (d) What do you mean by Relocation?
   (e) Define Overlays.
   (f) What is the difference between Multiprocessing and Multiprogramming?
   (g) What do you understand by Memory allocation and de-allocation?
   (h) Define Ambiguity.

UNIT-I

2. (a) What do you mean by Program Translation ? Discuss the various techniques of program translation.

   (b) Differentiate between System software and Application software. Also explain User-centric view of System software.

3. Explain the following :
   (a) Program Development.
   (b) Symbol Tables.
   (c) Program Execution.

UNIT-II

4. (a) Define the term Bug. Describe how testing and debugging are different.
   (b) What additional features would a three-pass assembler afford the user?

(c) Write the various design issues in assembler.

5. (a) Write a program in assembly language to demonstrate the concept of macro expansion.

(b) What are the features of macro facility?

UNIT-III

6. (a) Discuss the classification of grammar given by Noam Chomsky.

(b) What are the advantages of Dynamic linking?

7. (a) List two advantages and two disadvantages of binding at load time over binding at assembly time.

(b) List two advantages and two disadvantages of binding at execution time over binding at load time.

(c) At what point of time do each of the following loading schemes perform binding?
   (i) BSS Loader.
   (ii) Absolute Loader.
   (iii) Overlays.
   (iv) Direct Linking Loader.

UNIT-IV

8. (a) What is the aim of Code optimization? How is it achieved? Explain two phases of optimization using suitable example.

(b) Briefly explain benefits of Interpretation.

9. Write short notes on the following :

(a) Expression trees.

(b) Scoping rules.

(c) Recursion.

(d) Translators.