

M.C.A. DEGREE II SEMESTER EXAMINATION APRIL 2013

CAS 2203 SYSTEM SOFTWARE
(Regular and Supplementary)

Time: 3 Hours

Maximum Marks : 50

PART A
(Answer *ALL* questions)

(15 x 2 = 30)

- I. (a) What are the data structures used in the design of an assembler? Discuss the role of each.
(b) What do you mean by program relocation? Why it is needed?
(c) Why is register-to-register instructions said to be faster?
- II. (a) What is the purpose of a bootstrap loader?
(b) What are linking loaders? Mention their advantages.
(c) List two advantages of binding at load time over binding at assembly time.
- III. (a) In which situations do we use macros instead of subroutines?
(b) What are machine independent features of macroprocessor?
(c) Write a note on general purpose macroprocessors.
- IV. (a) What is a compiler? Mention the various phases of a compiler.
(b) Compare and contrast top-down and bottom-up parsing.
(c) What are the different possible ways of representing a program in intermediate form?
- V. (a) What is an operating system? Mention the different types of operating systems.
(b) What are virtual machines?
(c) Differentiate between the terms job scheduling and program scheduling.

(P.T.O.)

PART B

(5 x 4 = 20)

- VI. A. Explain algorithm of a two-pass assembler.
OR
B. Explain all the machine independent assembler features.
- VII. A. Explain how dynamic linking takes place, with the help of an example.
OR
B. What is the difference between linkage editor and linking loader?
- VIII. A. Explain simple one-pass macroprocessor.
OR
B. Explain the basic tasks performed by any macroprocessor.
- IX. A. Explain the various functions of a compiler in detail.
OR
B. Compare operator-precedence parsing and recursive-descent parsing.
- X. A. Explain the machine independent operating system features.
OR
B. Explain the memory allocation for job using fixed, variable and relocatable partitions.
