B.Tech. Degree V Semester Examination November 2014

CS 1502 SYSTEM PROGRAMMING
(*2012 Scheme*)

Time : 3 Hours   Maximum Marks : 100

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

I.   (a)   Discuss the various data structures used in assembly process.

(b)   What is a literal? How are literals handled by an assembler?

(c)   Discuss the algorithm of an absolute loader.

(d)   What is program relocation? How is it handled?

(e)   Explain how unique labels can be generated during macro expansion.

(f)   What is meant by recursive macro expansion?

(g)   What is an operating system? What are the basic functions of an operating system?

(h)   Write note on virtual machines.

PART B

(4 × 15 = 60)

II.   Write and explain algorithm for two pass assembler.   (15)

OR

III.   (a)   Explain 'control sections'. How are they handled by the assemblers?   (8)

(b)   Describe the design of single pass assembler.   (7)

IV.   Explain the algorithm for a linkage loader.   (15)

OR

V.   (a)   Explain the term 'bootstrap loader'. Write a SIC/XE program for a bootstrap   (8)
loader.

(b)   Explain dynamic linking.   (7)

VI.   Describe the algorithm for one pass macroprocessor.   (15)

OR

VII.   Write short notes on the following   (15)
        (i)   Concatenation of macro parameters.
        (ii)   Keyword macro parameters.
        (iii) Macro processing within language translators.

VIII.   Explain hierarchical structure with respect to OS design. What do you mean by   (15)
'virtual machine' approach in OS design?

OR

IX.   Write notes on   (15)
        (i)   Multiprocessor operating systems.
        (ii)   Distributed operating systems.
        (iii) Object oriented operating systems.

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