B. Tech Degree V Semester Examination, November 2009

IT/CS 502 SYSTEM PROGRAMMING

(2006 Scheme)

Time : 3 Hours Maximum Marks : 100

PART - A

(Answer ***ALL*** questions)

(8 x 5 = 40)

I. (a) What are the different types of records in an object program? Explain with example.

(b) With the help of an example, explain what is forward – reference problem in the design of an assembler.

(c) Write notes on linkage editor.

(d) What is dynamic linking?

(e) What is a macro? What is the difference between a normal function call and a macro call?

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

(g) Write notes on virtual machines.

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

PART – B

(4 x 15 = 60)

II. Explain the 2 – pass assembler algorithm. Also draw the flow chart. (15)

OR

III. (a) What are the data structures required for an assembler design? Explain. (7½)

(b) What is the role of (i) ORIGIN (ii) EQU (iii) LTORG in an assembly language program. (7½)

IV. (a) Explain (i) Program relocation (ii) Program linking. (10)

(b) Write notes on bootstrap loader. (5)

OR

V. Explain various loader schemes. (15)

VI. (a) What is a macro? Explain how it can be used in an assembly language program. (10)

(b) What is the role of macro processors in the execution of an assembly language program? (5)

OR

VII. With the help of an example, explain the different data structures required for macro processors. (15)

VIII. Explain the features of distributed operating systems. Compare it with object oriented operating system. (15)

OR

IX. (a) Explain the different operating system structures. (10)

(b) Explain Run-time environment in an operating system. (5)

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