

BTS(C) – V– (S) - 09 – 029 - F

***B. Tech Degree V Semester (Supplementary) Examination,  
July 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 is symbol table? Explain its use in assemblers?  
b. What are literals? How can they be implemented in assembler?  
c. Explain briefly about the design of absolute loader with the algorithm used?  
d. Explain two ways of representing relocation in case of relocation loader?  
e. What is macro? How can we generate unique labels in macro used in SIC/XE machine?  
f. How can we handle the definition of macro within another macro?  
g. Describe the hierarchical structure of OS?  
h. What are the basic functions of OS?

**PART B**

(4 x 15 = 60)

- II. Explain pass 1 algorithm for 2 pass SIC assembler with data structures used for it? (15)  
**OR**  
III. Explain the algorithm for pass 2 of a simple 2 pass assembler. (15)  
IV. a. Explain dynamic linking with suitable example and diagram. (8)  
b. Distinguish between linkage editors and linking loaders. (7)  
**OR**  
V. Explain the algorithm and data structures of linking loader? (15)  
VI. Explain the data structures and algorithm of macro processor. (15)  
**OR**  
VII. What is recursive macro expansion? What are the problems faced by recursive calls?  
How can we handle recursive macro calls? (15)  
VIII. a. Explain (i) User Interface (ii) Runtime Environment in an operating system. (7)  
b. Explain different OS? (8)  
**OR**  
IX. Compare distributed OS with object oriented OS. (15)

\*\*\*

