1019
B.E. (Information Technology)
Sixth Semester
Departmental Elective Course – I
ITE-645: System Software

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt _five_ questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Explain the following terms:-

a) Literal pool

b) CSADDR

c) Linkage editor

d) NAMTAB

e) Syntactic Analysis

f) PMT

g) External references

h) Assembler directives

i) concatenation Operator

j) BNF

(10x1)

UNIT - I

II. Explain how register to memory instructions are assembled? Apply BASE relative addressing mode to calculate displacement factor for INSTRUCTION NO: 160 with the help of following code

12	0003		LDB	#LENGTH
13			BASE	LENGTH
100	0033	LENGTH	RESW	1
105	0036	BUFFER	RESB	4096
160	104E		STCH	BUFFER,X

(10)

III. a) Explain Recursive macro expansion with the help of an example.

b) What are the various data structures involved in macro processors? Explain with the help of diagram. (6,4)

IV. a) How target address calculation is done in various RISC machines?

b) How program relocation problem can be solved in case of assemblers?
(6,4)

P.T.O.

UNIT – II

V.   What is the significance of loader? Explain Pass 1 and Pass 2 algorithm for linking loader.   (10)

VI. a) Design a finite Automata that recognizes string of digits including that contain leading zeroes.

b) What are various parsing techniques involved during syntactic analysis? Explain any one technique in detail.   (5,5)

VII. What is an interrupt? How interrupt processing is performed by operating system?   (10)

x-x-x