Roll No. ....   Total No. of Pages : 2

Total No. of Questions : 09

B.Tech. (CSE/IT) (Sem.–4)
SYSTEM PROGRAMMING
Subject Code : CS-210
Paper ID : [A0462]

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY.**
2. **Attempt any FOUR questions from SECTION-B.**
3. **Attempt any TWO questions from SECTION-C.**

SECTION-A   **(10 × 2 = 20 Marks)**

l. Write short notes on :

(a) Syntax Analysis

(b) Lexical Analysis

(c) Debugging

(d) Linker

(e) Loader

(f) Editor

(g) Finite state machines

(h) Kernel

(i) Intermediate code

(j) Grammar of Language

SECTION-B   **(4 × 5 = 20 Marks)**

2. Describe the role of System Software in modern computer systems.

3. SIMPLE   START
                BALR   15,0
                USING   *,15
    LOOP   L   Rl,TWO
                A   Rl,TWO
                ST   Rl,FOUR
                CLI   FOUR+3,4
                BNE   LOOP
                BR   14
    R1   EQU   1
    TWO   DC   F' 12'
    FOUR   DS   F
                END

(a) Show the symbol table at the end of pass 1

(b) Show the literal table at the end of pass 1

(c) Show the changes in the base register table during pass 2

(d) Show the generated "machine" code from pass 2

4. Discuss the concept of linkers in detail.

5. Discuss how the code is loaded into RAM.

6. What is Bootsrapping? Discuss lexical and syntax analysis phases of compiler.

SECTION-C   **(2 × 10 = 20 Marks)**

7. Describe :   (a) Formal Systems   (b) Phases of Compilers

8. Discuss in detail the first and second pass of assembler with their algorithms.

9. Discuss LEX and YACC specifications in detail.