

Con. 4044-12.

(3 Hours)

[Total Marks : 100

- N.B.** (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.

1. Answer the following :— 20
 - (a) What is System Software and application software ?
 - (b) What is the use of ORG (ORIGIN) ?
 - (c) What is positional parameter in macro ?
 - (d) Differentiate between Parse tree and Syntax tree.

2. (a) For a regular expression $(0+1)^*01$, construct an NFA for this expression and convert this NFA into DFA. 10
 (b) Explain various phases of compiler with suitable example. 10

3. (a) Explain two pass assembler with flowchart. 10
 (b) What are different functions of Loader ? Explain difference between Linkage editor and Linking loader. 10

4. (a) Test whether following grammar is LL (1) or not. Construct LL (1) Parse table. 10

$$S \longrightarrow AB \mid gDa$$

$$A \longrightarrow ab \mid c$$

$$B \longrightarrow dC$$

$$C \longrightarrow gC \mid g$$

$$D \longrightarrow fD \mid g$$
 (b) Explain runtime storage organization in detail. 10

5. (a) Draw Syntax tree and Directed Acyclic Graph (DAG) for expression $(a * b) + (c - d) * (a * b) + b$ 10
 (b) What is binding ? Explain Static and dynamic binding. 10

6. (a) Explain two pass macro processor with flowchart and databases. 10
 (b) Explain various forms of intermediate code used by compiler. 10

7. Write short notes on :— 20
 - (a) SPARC assembler
 - (b) LEX and YACC
 - (c) Debug monitor
 - (d) Macro assembler.