

T.E Sem-VI e-scheme may 2026
 11/05/2026
 COMPN
 Total Marks: 80

(3 Hours)

- N.B: (1) Question No. 1 is compulsory.
 (2) Attempt any three questions out of the remaining five questions.
 (3) Figures to the right indicate full marks.
 (4) Make suitable assumptions wherever necessary.

- Q.1. A. Discuss the goals of system software. 5
 B. Discuss phases of compiler. 5
 C. Define Relocation and Linking. Why are they crucial functions of a linking loader. 5
 D. Compute FIRST and FOLLOW for the following grammar: 5
 $S \rightarrow aABb$; $A \rightarrow Abc$; $A \rightarrow b$; $B \rightarrow d$
- Q.2. A. Operator precedence parser with example. 10
 B. Construct Three address code for the following program 10
- ```
int a[10];
for (i=0; i<n; i++)
if (a[i]<0)
 x+=a[i]+10;
else
 y+=a[i]+20;
```
- Q.3. A. Explain role of each of the system software, needed to execute a source program. 10  
 Explain the various features of a Macro facility, such as nested macro calls and 10  
 B. conditional macro expansion, with suitable examples.
- Q.4. A. Explain the working of a Single-pass macro processor with neat flowchart. 10  
 B. What are the different ways of representing Intermediate code? Explain with suitable example. 10
- Q.5. A. Explain any five code optimization techniques in compiler designing with suitable example 10  
 B. Explain design issues in code generation in detail. 10
- Q.6. A. Explain Absolute loader in detail. 10  
 B. Explain the various data structures used in the Two-Pass Assembler design, specifically focusing on the Opcode Table, Symbol Table, and Literal Table. 10

\*\*\*\*\*