COMP - U1

03/12/24

(3 Hours) **Total Marks: 80**

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.

03/12/24.

Q.1.	A.	Compare Application Software and System Software.	5
	B.	Construct operator precedence Parser for the grammar: E→E+E | E*E | a. Parse the string "a+a*a" using the same parser.	5
	C.	Explain forward reference concept with example.	5
	D.	Explain the functions of a Loader.	5
Q.2.	A.	Explain with flowchart design of two pass assembler.	10

	B.	Construct Three address code for the following program
		i= 1;
		x = 0;
		while (i <= n)
		{
		x = x + 1;
		i = i + 1;
		}
			10

Q.3.	A.	Explain Direct Linking Loader in Detail.	10
	B.	Design LL(1) parsing table for the given grammar: S →iCtSE | a E→eS | ε C → b Also state that whether the given grammar is LL(1) or not.	10
Q.4.	A.	Explain the working of a Single-pass macro processor with neat flowchart.	10
	B.	Explain with suitable example code optimization techniques.	10
Q.5.	A.	Explain different issues in code generation phase of compiler.	10
	B.	Explain DAG with suitable example.	10
Q.6.	A.	Explain the different phases of a compiler with suitable example.	10
	B.	Explain advanced macro facilities with suitable examples.	10