VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

School of Computer Science and Engineering

Fall Semester 2023-24 UG Seniors (B.Tech 2021 Batch)

Continuous Assessment Test – 2

SLOT: C1+TC1 & C2+TC2

Programme Name &Branch : B.Tech Computer Science and Engineering

Course Name & code: COMPILER DESIGN - BCSE307L

Exam Duration: 90 Min. **Maximum Marks: 50**

General instruction(s): **ANSWER ALL QUESTIONS**

Q.No.	Question	Max Marks
1.	Consider the following grammar G: 1. S → A# 2. A → B 3. A → A + B 4. B → P 5. B → P ^ B 6. P → C 7. P → P * C 8. C → *a* 9. C → (A) i) List the canonical collection of sets of LR ii) (0) items for the given grammar (5M) iii) Construct SLR parsing table iv) for the grammar.(3 M) v) Show the moves of the parser for the input string *a + a ^ (a + a)#.* (2 M)	10
2.	For the given grammar E→SS S→xS S→y i) List the canonical collection of sets of LR(1) items for the given grammar (5M) ii) Construct LALR parsing table for the grammar.(3 M) iii) Show the moves of the parser for the input string *xxyy* (2 M)	10
3.	Construct a syntax directed translation scheme that translates arithmetic expressions from postfix notation into infix notation. Give annotated parse tree for the expressions: ***95-2**** and ***952*-.***	10
4.	Generate the Quadruple, Triple and Indirect Triple representation of the three address code of the following statement a + b * c / e f + b * a	10
5.	Generate an intermediate code for the following expression (7M) ***E=m+n*** ***for(i=0;i<10;i++)*** ***for(j=0;j<10;j++)*** ***{c=a[i]+b[j];*** ***print c;}*** Do we need back patching in the above case? if so Why back patching is essential? (3M)	10