Name:.....
Roll No:.....

MAR ATHANASIUS COLLEGE OF ENGINEERING (AUTONOMOUS),
KOTHAMANGALAM - 686666
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.TECH SECOND SERIES EXAMINATION, OCTOBER 2026 (S5 CS, DS, AIML)
B24CS3T03 COMPILER DESIGN

Max. Marks: 40 Duration: 1.5 Hours

PART A

Answer all questions. Each question carries 3 marks.

1. **Describe** sets-of-items construction algorithm for SLR parser.
2. **Differentiate** synthesized attributes and inherited attributes.
3. **What** is L – attributed definition? Give an example.
4. **Draw** DAG for a + (a + b) * b + (a + b) * c

PART B

Answer all questions. Each question carries 14 marks.

5. **Construct** LR (1) item set for the given grammar. Also, check whether LALR (1) parser can be generated.

$$S \rightarrow L = R$$
$$S \rightarrow R$$
$$L \rightarrow *R$$
$$L \rightarrow id$$
$$R \rightarrow L$$

(14 marks)

6. a) **Write** the three-address code, quadruples, triples, and indirect triples for the following expression: (a+b)*(b+c)+(a+b+c) (10 marks)
   b) **Explain** the advantages and limitations of quadruples, triples, and indirect triples. (4 marks)

VISION

To mould competent computing professionals, innovators, and leaders guided by ethical values and committed to technological advancement and sustainable societal development.

MISSION

- Provide quality education through strong theoretical foundations, experiential learning, and exposure to emerging computing technologies.
- Cultivate critical thinking, research aptitude, and innovation through problem-based learning, industry interaction, and research initiatives.
- Foster ethical values, leadership, social responsibility, and an aspiration for lifelong learning through professional practices, teamwork, and mentoring.