

**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, MAY 2013**

IT/CS/PTCS 09 602—COMPILER DESIGN,
(2009 Admission onwards)

Time : Three Hours

Maximum : 70 Marks

Part A*Answer all questions.*

1. What is CFG ? Explain with an example.
2. Define handle pruning.
3. What are the LR (0) items ?
4. What is Left recursion ? Write the rules to eliminate left recursion.
5. Construct DAG for the following expression $(a + b) - (e - (c + d))$.

(5 × 2 = 10 marks)

Part B*Answer any four questions.*

6. Discuss the compiler construction tools.
7. Compute the FIRST and FOLLOW sets of each of the non-terminals for the following grammar :—

P → AQRbe | mn | DEi

A → ab | ε

Q → q1q2 | ε

R → r1r2 | ε

D → d

E → e.

8. Discuss the problems in top-down parsers. Explain how to overcome them.
9. Compare Inherited attributes and Synthesized attributes with an example.
10. Discuss about the stack allocation strategy of runtime environment with an example.
11. Explain the loop optimization.

(4 × 5 = 20 marks)