THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2018
(CUCSS-PG)
CC17P CSS3 C02 – PRINCIPLES OF COMPILERS
(Computer Science)
(2017 Admissions)

Time: Three Hours   Maximum: 36 Weightage

PART A
Answer *all* questions. Each question carries 1 weightage.

1. Differentiate between static and dynamic allocation.

2. What are the various conflicts that occur during shift reduce parsing?

3. Define flow graph.

4. Construct syntax tree and draw DAG for the expression a + a * (b - c).

5. Differentiate between lexeme, pattern and token.

6. Discuss the issues with nested procedures.

7. Show that the grammar S→ 0S1 / SS / ϵ is ambiguous.

8. Give an overview of region based analysis.

9. When we say that the grammar G is LL(1) grammar?

10. What do you mean by type conversion?

11. Compare compiler and interpreter.

12. Eliminate the left recursion for the grammar A→ Ac / Aad / bd.

(12 x 1 = 12 Weightage)

PART B
Answer any *six* questions. Each question carries 2 weightage.

13. Discuss the various applications of compiler technology.

14. Write a note on resolving flow control statements.

15. Explain in detail about optimization of basic blocks.

16. Write a note on operator precedence parsing.

17. What is three address code? Describe the various methods of implementing three address statements.

18. Compare DFA and NFA. Also write the procedure for the conversion of NFA to DFA.

19. What is top down parsing? Explain any one method of top down parsing.

20. Give a detailed account of data flow analysis.

21. Explain:

    a) Memory hierarchy   b) Reducing fragmentation

(6 x 2 = 12 Weightage)

PART C
Answer any *three* questions. Each question carries 4 weightage.

22. Explain Simple LR parsing with example.

23. What are the principal sources of code optimization?

24. Explain the phases of compiler.

25. Explain how activation trees and activation records are related with runtime storage allocation.

26. What are type checkers? How do they help in compilation?

27. Discuss the various issues in the design of code generator.

(3 x 4 = 12 Weightage)

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