Code: 9A05504

R09

III B. Tech I Semester (R09) Supplementary Examinations, May 2012
COMPILER DESIGN
(Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1 (a) Write short notes on compiler construction tools.
   (b) Discuss in detail about grouping of phases.

2 (a) Discuss in detail about different orders of derivation in parsing.
   (b) What is the role of parser? Explain in detail.

3 (a) What is the syntax for YACC source specification program?
   (b) How YACC resolves parsing action conflicts? What is the new production added to the YACC on error recovery?

4 (a) Explain about specification of a simple type checker.
   (b) Describe in detail about abstract syntax tree.

5 Explain the linear list hash table and symbol table mechanism with examples.

6 What do you understand by code optimization? Write the algorithm to partition the 3 address code into basic blocks.

7 Write and explain iterative algorithm to solve data-flow equation.

8 Generate target machine code for the following program.

```
main()
{
        for( j=2; j<=n; j++)
                a[j]=1;
        count=0;
        for(j=2; j<=n**0.5;j++)
                if(a[j])
                {
                        count++;
                        for(k=2*j; j<=n; k=k + j)
                                a[k]=0;
                }
        print f ("%d", count);
}
```

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