(c) Differentiate between following storage allocation strategies : 7

(i) Stack allocation

(ii) Heap allocation

(d) Discuss various parameter passing techniques with suitable example. 7

5. (a) What is DAG? What are its advantages in context of optimization. 2

(b) Explain the need of code optimization with example, illustrate loop optimization. 7

(c) Explain the working of simple code generator. 7

(d) What is global data flow analysis and its use in code optimization? 7

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322612(22)

B. E. (Sixth Semester) Examination, Nov.-Dec. 2018

(Old Scheme)

(Branch : CSE)

COMPUTER DESIGN

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note *: Attempt all questions. Part (a) is compulsory and attempt any two from (b), (c) and (d) parts of each question. All questions carry equal marks.*

1. (a) Differentiate between Compiler and Interpreter. 2

(b) Explain the six phases of compiler with diagram. 7

(c) What is a cross compiler? How is the bootstrapping of a compiler done to a second machine. 7

(d) Explain the concept of buffering and how this could be made faster? 7

2. (a) What do you mean by ambiguity in grammar? Illustrate with example. 2

(b) Construct the predictive parsing table for the following grammar. 7

$S \rightarrow aAC \mid bB$

$A \rightarrow Abc \mid Abd \mid e$

$B \rightarrow f \mid g$

$C \rightarrow h \mid i$

(c) Define operator grammar and explain the working of operator precedence parser. 7

(d) Write a YACC source program for a simple desktop calculator that reads an arithmatic expression. Evaluate it and then print it's numeric value. 7

3. (a) What is L-attributed definition? 2

(b) Explain the working of a type checker with an example. 7

(c) Explain various internal representation techniques used for three address code, with example. 7

(d) Consider the following code fragment. Generate the three address code for it. 7

```
main ( )
{
    int i;
    int a[10];
    i = 1;
    while (i <=10)
    {
        a[i] = 0;
        i = i + 1;
        }
}
```

4. (a) Define activation record. 2

(b) Explain various storage management techniques available and their importance in compiler design. 7