Q. 4. (a) Explain storage organisation and allocation strategies.

(b) Explain activation record. What is its need in the organisation of run time storage ? Explain different fields of activation record.

(c) Write short notes on the following :

(i) Symbol table

(i) Dynamic storage allocation.

Q. 5. (a) Explain in brief issues in the design of the code generator.

(b) Illustrate with an example how one can generate a code using DAG's.

(c) What is global data flow analysis ? Explain with examples.

322612 (22)

BE (6th Semester)

Examination, Nov.-Dec., 2014

Branch : CSE

COMPILER DESIGN

Time Allowed : Three Hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Answer any two parts of each question. All questions carry equal marks. Assume any missing information.

Q. 1. (a) Explain different phases of compiler in detail.

(b) Construct a transition diagram to :

(i) Identifiers

(ii) Floating point numbers

(iii) C relational operators.

(c) Compare NFA and DFA. Using Thompson's construction, construct finite automata for the regular expression (a/b)* abb (a/b)*.

Q. 2. (a) Eliminate left recursion from :

$S \rightarrow L$

$L \rightarrow LB/B$

$B \rightarrow B$ sub F/F

$F \rightarrow (L)$ / text

(b) Construct operator precedence table for the following grammar :

$S \rightarrow (L) | a$

$L \rightarrow L, S | S.$

(c) Explain YACC and LEX tools in detail.

Q. 3. (a) What is syntax tree ? Give syntax directed translation scheme to translate from

expression to equivalent syntax tree. Give sequence of moves to perform syntax directed scheme for the expression x + y * z.

(b) Convert the following expression :

e = (a – b) * (c + d) + (a – b)

is to :

(i) Postfix notation

(ii) Syntax tree

(iii) Quadruple

(iv) Triples

(v) Indirect Triples.

(c) Write the syntax directed definition to translate Boolean expressions into three address code. Using that syntax directed definition translate the Boolean expression a > b and b < d into three address code.