

UNIT – III

6. (a) What is an Activation record relevant to the intermediate phase with respect to procedure declarations. Explain how it is generated.
- (b) How declarations are done in syntax directed translation ? Illustrate with example.
7. (a) How assignment statement can be converted into intermediate code ? Illustrate with example.
- (b) What is three address code ? on its different types. How address statements implemented ? Give example.

UNIT – IV

8. Define a Directed Acyclic Graph and write the sequence of operations for the expression: $a+a*(b-c)+(b-c)*d$. Construct a DAG.
9. How structure preserving transformation is different from algebraic transformation ? Explain with example.

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Roll No.

67058

**MCA 2nd Semester CBCS Scheme
w.e.f. 2016-17 Examination – May, 2018**

COMPILER DESIGN

Paper : 16MCA32C3

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is compulsory. Apart from it, attempt four questions by selecting one question from each Unit. All questions carry equal marks.

1. Compulsory Question :

- (a) How linking is defined for overlay structured program ?
- (b) Differentiate between pure and impure interpreter.

- (c) How the problem of left recursion and left recursion are removed ?
- (d) Show schematic form of parser with its parsing table.
- (e) Define various types of syntax directed translation.
- (f) What is a symbol table ? Discuss various data structure used to implement
- (g) What role does the target register play on code generation of compiler ?
- (h) Discuss various targets for code optimization.

UNIT - I

2. (a) How relocation is performed by linker ? Explain with example.
- (b) What are different functions performed by loaders ? Differentiate absolute allocating and direct linkage loader.

3. (a) Explain use and fields of following tables of macro :
KPDTAB, MDT, EVTAB, SSTAB.
- (b) What are various loading schemes ? Explain bootstrap loader with its merits and demerits.

UNIT - II

4. (a) What is the difference between:
(i) Passes and phases of compiler
(ii) Syntax analysis and semantic analysis.
- (b) Construct the canonical LR(1) item sets for the following grammar :
- $$S \rightarrow AA$$
- $$A \rightarrow aA/b$$
5. (a) Consider the production :
 $S \rightarrow aAb$
 $A \rightarrow cd/C$
Show that recursive descent parsing fails for input string "acdb", also explain Recursive Descent Algorithm.
- (b) What are the problems with top down parsing ? Write the algorithm to remove left recursion from a grammar with example.