

Unit-I

2. (a) What are the problems faced by a one-pass assembler ? Draw and explain the detailed flowchart for pass-2 of a two-pass assembler.
- (b) What is loader ? Discuss different loading schemes. Explain re-allocating loader scheme with its advantages and disadvantages.
3. (a) What are the basic functions of loaders ? Differentiate absolute, relative and linking loader.
- (b) Discuss the basic tasks a macro instruction processor performs. Explain how the nested macro calls are executed with example.

Unit-II

4. (a) Explain the usage of YACC parser generator in construction of a Parser.
  - (b) What is the role of code optimizer in compiler ? Is it a mandatory phase ? Discuss.
  5. (a) Consider the production :  
S → aAb  
A → cd/C
- Show that recursive descent parsing fails for input string "acdb", also explain Recursive Descent Algorithm.

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Unit-III

- (b) List out the functions of a Lexical Analyzer ? State the reasons for the Separation of Analysis programs into Lexical, Syntax and Semantic Analysis.
6. (a) Give the general structure of activation record. Explain the purpose of each component.
- (b) What do you mean by attributed grammars ? Discuss the translation scheme for converting an infix expression to its equivalent postfix form.

7. (a) Explain the use of symbol table in compilation process. List out the various attributes for implementing the symbol table.

- (b) Generate the three address code for the following code fragment :

```
while (a>b)
{ If (c<d)
  x = y + z;
  else
  x = y - z; }
}
```

Unit-IV

8. (a) Explain various code optimization techniques. Discuss the strategies for loop optimization and dead code elimination.

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**M. Tech. 1st Semester (Civil Engg.)  
(Specialization in Structural Engg.)  
Examination – January, 2023  
ADVANCED STRUCTURAL ANALYSIS**

Paper : CE-611/MTSD-102

Time : Three hours ]

[ Maximum Marks : 100

*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 :** Attempt *five* questions in all. Q. 1 is *compulsory*. Attempt *four* more question from the sections A, B, C & D by selecting *one* question from each Section.

1. Describe the following : 20
- (a) Types of supports
  - (b) Determinate and Indeterminate structure
  - (c) Types of beams
  - (d) Types of loading
  - (e) Stiffness method

**SECTION – A**

2. Discuss various steps to be followed while analyzing the structure by stiffness method. 20

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