

**UNITED COLLEGE OF ENGINEERING AND RESEARCH, NAINI,
PRAYAGRAJ**

Department of Computer Science and Engineering
Compiler Design Assignment
Unit1

Short Question:-

[CO1]

1. Differentiate between dynamic loader and linker?
2. What is assembler?
3. Draw the transition diagram for identifier?
4. Draw the transition diagram for relational operator?
5. Describe the language denoted by the following regular Expression $(1+0)^*$.
6. What is cross-compiler?
7. Discuss the utility of macros?
8. What do you mean by a regular expression?
9. Differentiate between compiler and interpreter?
10. Discuss the merits and demerits of the single pass compiler and multi-pass compiler?
11. Describe various compiler writing tools?
12. Explain the term bootstrapping with example?
13. What is role of lexical analyzer? Enumerate the issues handled by lexical analyzer?
14. Differentiate between linker and loader?

Medium Question:-

[CO1]

1. Discuss input buffering and preliminary scanning in lexical analysis?
2. How is a Finite automaton useful for Lexical Analysis?
3. Why do we divide the compilation into phases?
4. Discuss the challenges in compiler design?
5. How boot strapping is done in more than one machine?
6. Discuss the subset construction algorithms?
7. Explain the term token, lexeme, pattern?
8. Write the algorithm for moving forward pointer in “input buffering”
Scheme ?
9. Construct a minimal DFA which accept set of all strings over $\{a,b\}$ in which every ‘a’ should be followed by ‘bb’
10. How is finite Automation useful for Lexical Analysis?

Long Question:-

[CO1]

1. Construct minimal DFA for the following regular expression
 $(a|b)^*a(a|b)$
2. Construct a minimal DFA which accepts set of all strings over $\{a,b\}$ in which no. of a 's are divisible by 3 and no. of b's is divisible by 3
3. Show the construction of NFA for the following Regular Expression
 $(a|b)^*a(a|b)(a|b)$
4. Construct NFA for the following RE using Thomson's construction:
 $(0|1)^*0(0|1)^*$
5. Explain the phases of the compiler in detail. Write down the output of each phase for the expression **$a=b+c*50$** .