

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks	
Section I					
1	Short Answer type questions.				
a	What is an interpreter, and how does it differ from a compiler? or	CO1	Remember	4 x 5 = 20	
	Provide five examples of compilers and briefly describe the programming languages they compile.	CO1	Understand		
b	What is an annotated parse tree? Provide a well-defined example to illustrate it. or	CO3	Understand		
	What is an inherited attribute? Provide an example to illustrate its use.	CO3	Understand		
c	How would you define lexical analysis, and what specific tasks does a lexical analyzer perform within this process? or	CO2	Understand		
	What is Lex? What are their functions?	CO2	Understand		
d	Define the term "target language" in compiler design. or	CO5	Understand		
	Explain the concept of "addressing in target code" with an example.	CO5	Understand		
Section II					
	Long Answer type questions.				
2	Explain the role of a compiler in the software development process. Why is it necessary to translate high-level language instructions into machine-level language? or	CO1	Apply	3 x 10 = 30	
	Differentiate between 'source program' and 'object code' in the context of compilation. Provide an example to illustrate your explanation.	CO1	Understand		
3	Define syntax analysis and explain its main objectives in the parsing and interpretation of programming languages. or	CO4	Understand		
	Explain grammar with a common prefix and describe how it can be eliminated using left factoring. Perform left factoring on the following grammar: $A \rightarrow xAB / xBc / xAc$	CO4	Understand		
4	Explain the main issues in the design of a code generator. Highlight at least three key issues and describe why they are important. or	CO5	Understand		
	Identify three common sources of optimization in machine-independent optimization and provide examples to demonstrate their impact on code efficiency and improvement.	CO5	Understand		
Section III					
	Application based questions				
5	Given the grammar: $S \rightarrow E E \rightarrow E + T \mid T T \rightarrow T * F \mid F F \rightarrow \text{digit}$ Define its semantic actions and construct an annotated parse tree for the input string "12 * 5 + 6". or	CO4	Create	1 x 20 = 20	
	Given the grammar: $E \rightarrow E + T \mid T T \rightarrow T * F \mid F F \rightarrow \text{id}$ Define its semantic actions and construct an annotated parse tree for the input string "8 * 3 + 7".	CO4	Create		

COURSE OUTCOME

CO1 Analyze the need of compiler for interfacing between user and machine.

CO2 Explain the role of several phases of compilation process.

CO3 Create an awareness of the function and complexity of modern compilers.

CO4 Outline the major concept areas of languages translation and Compiler design.

CO5 Develop a comprehensive Compiler for a given language.