

ANURAG Engineering College

(An Autonomous Institution)

III B.Tech I Semester Supplementary Examinations, December – 2024

COMPILER DESIGN

(COMPUTER SCIENCE AND ENGINEERING)

Time: 3 Hours**Max. Marks: 75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Define Bootstrapping.	CO1	L2	2M
2. What is the role of symbol table in compilation?	CO1	L2	3M
3. Define Type-2 grammar.	CO2	L2	2M
4. What is the use of Lex?	CO2	L1	3M
5. Define Handle.	CO3	L2	2M
6. What is Shift Reduce Parser?	CO3	L2	3M
7. List various Intermediate code forms.	CO4	L1	2M
8. Define Attributed Grammar.	CO4	L2	3M
9. Outline the need of code optimization.	CO5	L1	2M
10. What do mean by live variable analysis?	CO5	L2	3M

Section-B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 X10M = 50M)**

11. A) Explain the different phases of a compiler, showing the output of each phase, using the example of the following statement: position: = initial + rate * 60.	CO1	L3	10M
OR			
B) Discuss different data structures in compilation.	CO1	L3	10M
12. A) Describe the lexical errors and various error recovery strategies with suitable examples.	CO2	L3	10M
OR			
B) What is ambiguous grammar? Eliminate ambiguities for the grammar: $E \rightarrow E + E E * E (E) id.$	CO2	L3	10M
13. A) Construct predictive parsing table for the following grammar. $E \rightarrow T E'$ $E' \rightarrow +T E' \epsilon$ $T \rightarrow F T'$ $T' \rightarrow *FT' \epsilon$ $F \rightarrow (E) id$	CO3	L3	10M
OR			
B) Construct LALR Parsing table for the following grammar. $S \rightarrow Aa bAc$ $S \rightarrow dc$ $S \rightarrow bda$ $A \rightarrow d$	CO3	L3	10M

14. A) What is an ordered and unordered symbol table? What is the function of symbol table in the compilation process? Explain. CO4 L3 10M
- OR**
- B) Describe different syntax directed translation schemes. CO4 L3 10M
15. A) A flow graph is useful for understanding code generation algorithm. Justify your answer with an example. CO5 L3 10M
- OR**
- B) Explain about data flow analysis of structured programs. CO5 L2 10M