C. U. SHAH UNIVERSITY
Winter Examination-2021

Subject Name: Translator Design

Subject Code: 4TE07TDE1   **Branch: B.Tech (CE)**

Semester: 7   **Date: 16/12/2021**   **Time: 02:30 To 05:30**   **Marks: 70**

Instructions:
  (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  (2) Instructions written on main answer book are strictly to be obeyed.
  (3) Draw neat diagrams and figures (if necessary) at right places.
  (4) Assume suitable data if needed.

Q-1	**Define the following terms:**	
a)	Lexical analysis	**01**
b)	Parsing	**01**
c)	Compiler	**01**
d)	Finite Automata	**01**
e)	Ambiguous Grammar	**01**
f)	Cross Compiler	**01**
g)	Token	**01**
h)	Symbol table	**01**
i)	Top-down parsing	**01**
j)	Macro	**01**
k)	Bottom-Up Parsing	**01**
l)	One pass assembler	**01**
m)	Subroutine	**01**
n)	Language processor	**01**

Attempt any four questions from Q-2 to Q-8

Q-2	**Attempt all questions**	
a)	What does the linker do? What does the loader do? What does the preprocessor do? Explain their roles in compilation process.	**07**
b)	Write a brief note on input buffering techniques to Lexical Analyzer.	**07**
Q-3	**Attempt all questions**	
a)	Explain the analysis synthesis model of compilation. List the factors that affect the design of compiler. Also List major functions done by compiler.	**07**

b)	Test whether the following grammar is LL (1) or not. Construct predictive parsing table for it. S→1AB|Є A→1AC|0C B→0S C→ 1	**07**

Q-4   **Attempt all questions**

a)	What is Intermediate form of the code? What are the advantages of it? Translate the following expression to quadruple: a + b * c / e ↑ f + b * c	**07**
b)	What is the difference between parse tree and syntax tree? Write appropriate grammar and draw parse as well as syntax tree for a*(a-a^a)	**07**

Q-5   **Attempt all questions**

a)	Explain various code optimization techniques.	**07**
b)	Explain: Symbol Table Management. How symbol table differs from other data structures?	**07**

Q-6   **Attempt all questions**

a)	Discuss generic issues in the design of code generation.	**07**
b)	Compare Static and Dynamic memory allocation	**07**

Q-7   **Attempt all questions**

a)	Explain Shift-Reduce parsing with suitable example.	**07**
b)	Construct a DFA for a given regular expression (010+00)*(10)*	**07**

Q-8   **Attempt all questions**

a)	Define: DAG. Explain DAG representation of basic block with example.	**07**
b)	Explain Operator Precedence Parsing technique in detail.	**07**