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COLLEGE OF ENGINEERING PATHANAPURAM

Sixth Semester First Series Examinations – June 2022

COURSE : CST 302 COMPILER DESIGN

Max.marks:50 **Time: 2 Hr**

QN.NO		QUESTIONS	MARKS	Bloom's Taxonomy Level	CO Attainment
PART- A(Answer all Questions)					
1		Draw the transition diagram for the regular expression. **Relop** -> </<=/=/< >/>=/ >	3	L3	CO1
2		Apply Bootstrapping to obtain a compiler for p on machine M, already there exist a c++ compiler for p on machine N.	3	L3	CO1
3		Discuss the role of symbol table in compiler design process.	3	L2	CO1
4		Determine FIRST and FOLLOW **S ->ACB/Cbb/Ba** **A ->da/BC** **B ->g/€** **C ->h/€**	3	L3	CO2
5		Solve the given grammar by eliminating left recursion. **A -> Ba/b/p/q** **B -> Bc/Ad/€**	3	L3	CO2
6		Illustrate left factoring. **S ->a/ab/abc/abcd/e/f**	3	L3	CO2
PART – B(Answer all Questions)					
7	**a**	Draw the different phases in the design of a compiler with the help of a source language statement **a = b * c – 2** where a,b & c are float variables?	8	L3	CO1
	b	Scanning of source code in compilers can be speeded up using input buffering. Explain?(code, Example & Figure).	8	L2	CO1
8	**a**	Consider following grammar **S -> (L)|a** **L -> SL'** **L' -> ε|, SL'** (i) Construct predictive parser table (ii) Is it LL(1) parser	8	L3	CO2
	b	Translate the following grammar so that it will be LL(1) without changing the language. **S -> aAC|bB** **A -> Abc|Abd|ε** **B -> f|g** **C -> h|i**	8	L3	CO2

List of course outcomes:

1. Model the different phases of compilation process. (**Level 3**).
2. Apply the concept of grammars and parsing to the translation of computer languages. (**Level 3**)
3. Apply bottom-up parsing techniques to produce appropriate parse tree representation of input.(**Level 3**)
4. Apply Syntax directed translation schemes, storage allocation strategies and intermediate representations for various Context Free Grammar scenarios.(**Level 3**)
5. Apply code optimization and code generation techniques in compilation.(**Level 3**)

NAME AND SIGNATURE OF THE FACULTY : JOOBY.E

NAME AND SIGNATURE OF THE MODULE CO-ORDINATOR :

NAME AND SIGNATURE OF HEAD OF THE DEPARTMENT :PRASANTH.R

PRINCIPAL