Model Question Paper I

CBCS SCHEME

Six Semester B.E Degree Examination_____

Compiler Design (BCS613C)

TIME: 03 Hours **Max.Marks:100**

1. Note: *Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE***
2. *M: Marks, L: Bloom's level, C: Course outcomes.*

		Module - 1	M	L	C
Q.1	**a**	What is a Compiler? Explain the working of a Compiler with your own example?	**8**	**L1**	**CO1**
	b	List and explain applications of Compiler design.	**8**	**L2**	**CO1**
	c	Write a note on productivity tools.	**4**	**L2**	**CO1**
		OR			
Q.2	**a**	Consider the context-free grammar. S -> SS+ | SS* | a i)Show how the string aa+a* can be generated by this grammar. ii)Construct a parse tree for this string	**8**	**L2**	**CO1**
	b	With a neat diagram explain Language processing system.	**8**	**L1**	**CO1**
	c	Write a short note on Interpreter.	**4**	**L2**	**CO1**
		Module - 2			
Q.3	**a**	Explain tokens, patterns, and lexemes. Demonstrate the same with examples.	**8**	**L2**	**CO2**
	b	Discuss different types of common programming errors.	**6**	**L2**	**CO2**
	c	Write and Apply an algorithm to eliminate left recursion from following grammar. S→ A a | b A→ A c | S d | ε	**6**	**L3**	**CO2**
		OR			
Q.4	**a**	Write the transition diagram that recognizes the lexemes matching the token Relation Operator(**relop**) and identifiers.	**8**	**L2**	**CO2**
	b	Discuss different error recovery strategies.	**6**	**L2**	**CO2**
	c	Eliminate left recursion from the given grammar E→E+A | A	**6**	**L3**	**CO2**

Model Question Paper I

		A→A B | B B→ B # | C C→ a | b			
		Module – 3			
Q.5	**a**	Is the grammar G = { S->L=R, S->R, R->L, L->*R | id } an LL(1) grammar?	**8**	**L3**	**CO3**
	b	Explain recursive descent parsing with example.	**6**	**L2**	**CO3**
	c	Explain shift reduce parsing technique with example.	**6**	**L2**	**CO3**
		OR			
Q.6	**a**	Show that the following grammar is LL(1). S→A A→ a B | Ad B→ bBC| f C→ g	**8**	**L3**	**CO3**
	b	Write the procedure to compute first and follow of the given grammar.	**6**	**L2**	**CO3**
	c	Explain handle pruning with example.	**6**	**L2**	**CO3**
		Module - 4			
Q.7	**a**	Show that the following grammar is SLR(1). E → E+ T | T T → T * F | F F → (E) | id	**10**	**L3**	**CO4**
	b	What is dependency graph? Write dependency graph for the expression 3 * 5 with suitable top down grammar.	**10**	**L3**	**CO4**
		OR			
Q.8	**a**	Construct LR(0) items and parsing table for the following grammar. S→ CC C→ c C C→ d	**10**	**L3**	**CO4**
	b	Write SDD for simple type declarations. Also write dependency graph for a declaration int id1,id2,id3.	**10**	**L3**	**CO4**
		Module - 5			
Q.9	**a**	Write a list of the common three address instruction forms with example.	**10**	**L2**	**CO5**
	b	Write a note on the following (i) Input to the code generator	**10**	**L2**	**CO5**

Model Question Paper I

		(ii) The target program			
		OR			
Q.10	**a**	Write SDD for flow of control statements.	**10**	**L2**	**CO5**
	b	Write a note on a simple target machine model.	**10**	**L2**	**CO5**