## Enrollment No: \_\_\_\_\_ Exam Seat No: \_\_\_\_\_ C. U. SHAH UNIVERSITY **Summer Examination-2020**

## **Subject Name : Translator Design**

Subject	t Code	e:4TE07TDE1	Branch: B.Tech (CE)	
Semest Instruct	<b>er : 7</b> ions:	Date : 03/03/2020	Time : 10:30 To 01:30	Marks :70
(1) (2) (3) (4)	Use o Instru Draw Assu	of Programmable calculator & any other actions written on main answer book are neat diagrams and figures (if necessary me suitable data if needed.	r electronic instrument is prohib e strictly to be obeyed. y) at right places.	ited.
Q-1	a)	Attempt the following questions: DAG representation of a basic block a a) Automatic detection of local commo b) Detection of induction variables.	llows on sub expressions.	(14)
	b)	c) Automatic detection of loop variant A series of statements explaining how called	d) None of the mentione the data is to be processed is	ed.
	c)	An intermediate code form is a) Postfix Notation b) Syntax ' d) All of the mentioned	Trees c) Three address co	ode
	d)	Which grammar violates rules of an op (i) $P \rightarrow QR$ (ii) $P \rightarrow Q \ s \ R$ (iii) $P \rightarrow$ a) (i) only (ii) and (iii) (iii) (iii) (iii) and	perator grammar? ε (iv) P ->Q t (iii) only d) (iii) and (iv) only	V
	e)	<ul><li>a) (i) only (i) and (iii) (i) and</li><li>b) (i) and (iii) (i) and</li><li>b) What data structure in a complier is us variables and their attributes?</li><li>a) Abstract syntax tree (b) Symbol to (c) and (c</li></ul>	ed for managing information ab cable c) Semantic stack	out
	f)	<ul><li>a) Lexical Analysis</li><li>b) Syntax Analysis</li><li>d) Code generation</li></ul>	g? s c) Syntax Directed Translation	n
	g)	In an absolute loading scheme, which programmer? a). Allocation b). Linking c). R	loader function is accomplished eallocation d). both (a) and (b)	by )
	h)	In a bottom up evaluation of a syntax of attributes can a) Always be evaluated b) Be evaluated attributed c) Evaluation only done if the definition d) None of the montioned	lirection definition ,inherited ed only if the definition is L – on has synthesized attributes	
	i)	A grammar that produces more than or	ne parse tree for same sentence i	s



Atten Q-2	j) k) l) m) npt any (a)	called a) Ambiguous b) Unambiguous c) Regular d) None of the mentioned What is top-down parser? What is Regular expression? Define :Language processor Define: Preprocessor Compare NFA and DFA <b>four questions from Q-2 to Q-8</b> <b>Attempt all questions</b> What is code optimization? Explain different types of code optimization.	(14)
	(b)	Explain different data structure used in design of macro processor.	
Q-3	(a) (b)	Attempt all questions Explain cousin of compiler. What is role of lexical analyzer? Explain different input buffering technique.	(14)
Q-4	(a) (b)	Attempt all questions Conversation from Regular Expression to DFA without constructing NFA of $(\mathbf{a} + \mathbf{b})^* \mathbf{a} \mathbf{b} \mathbf{b}$ Design LL(1) parsing table for the following grammar and check it is ll(1) or not: $A \rightarrow AcB   cC   C , B \rightarrow bB   b , C \rightarrow CaB   BbB   B$	(14)
Q-5	(a) (b)	Attempt all questions Construct syntax tree and DAG for $(a + b) * (a + b + c) * (a + b + c + d)$ Write a note on Linker and loader.	(14)
Q-6	(a) (b)	Attempt all questions Write a note on Phases of compiler.	(14)
Q-7	(a) (b)	Attempt all questions What is peephole optimization? Explain different techniques of it Construct LR (0) item set for the given grammar. $S \rightarrow AaAb \mid BbBa , A \rightarrow \varepsilon, B \rightarrow \varepsilon.$	(14)
Q-8	(a)	Attempt all questions Write a note on static memory and dynamic memory allocation	(14)

(b) Write a note on syntax directed Translated mechanism.

