Sea	t No.:	Enrolment No.	
		GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER II (OLD) – • EXAMINATION – SUMMER 2016	
Su	bject	Code: 1720202 Date:18/05/20	16
Su	bject	Name: Design of Language Processors 0:30 am to 01:00 pm Total Marks:	70
	tructio	<u>-</u>	
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Explain Phases of compiler with example.	07
	(b)	When symbol table is created? Explain different techniques to implement symbol table.	07
Q.2	(a) (b)	Explain Activation Record and various parameter passing techniques. Construct NFA using Thompson's notation and construct DFA from it for following expression: aa*(b c) a*c#	07 07
	(b)	OR Construct DFA for following regular expression without constructing NFA and minimized it a*b*a(a b)*b*a #	07
Q.3	(a)	Consider the following grammar $S \rightarrow A$	07
		$A \rightarrow aB \mid Ad$ $B \rightarrow bBC \mid f$ $C \rightarrow g$	
	(b)	Find non-recursive predictive parsing table. What do you understand by a handle? Explain stack implementation of shift reduce parser with the help of example.	07
		OR	
Q.3	(a)	Construct SLR parsing table for following grammar	07
		$S \to T$	
		$T \rightarrow CC$	
		$C \to cC$ $C \to d$	
	(b)	Prepare operator precedence table for following grammar	07
	(~)	$E \rightarrow E + T \mid T$	٠.
		$T \rightarrow T * F \mid F$	
		$F \rightarrow id$	
		i. Parse the string "id+id*id"ii. Find operator precedence function	
Q.4	(a) (b)	Write a Short note on Peephole Optmization. Construct a syntax directed translation schema that translates arithmetic expressions from infix into postfix notation. Show the application of your scheme to string "3*4+5*2".	07 07
		OR	
Q.4	(a)	List the tasks performed by each pass of a two pass assembler. Also explain following directives for an assembler: ASSUME, EQU, EXTERN, ORIGIN	07
	(b)	Explain use and field of following tables of a macro KPDTAB, MDT, EVTAB, SSTAB	07
Q.5	(a)	What are Nested Macros? Explain with an appropriate example	07

	(b)	Explain different code improving techniques in brief.	07
		OR	
Q.5	(a)	Explain program relocation with example.	07
	(b)	Explain in detail how is linking carried out by a linker	07
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