Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI- EXAMINATION – SUMMER 2016

Subject Code:160706 **Date:13/05/2016**

Subject Name:System Programming

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	What is Language Processor? Explain all phases of Compiler with neat flowchart.	**07**
	(b)	Briefly explain Language Processing Activities.	**07**
Q.2	**(a)**	With the help of following grammar and given string explain role of Operator Precedence Parser. E → E+T / T T → T*V / V V → a / b / c / d String to Parse **'a+b*c*d'**.	**07**
	(b)	Write unambiguous production rules (grammar) for arithmetic expression containing +, - , *, / and ^ (exponentiation). Construct parse tree and abstract syntax tree for : **<id> – <id> * <id> ^ <id> + <id>**	**07**
		OR	
	(b)	Compare Top Down and Bottom Up Parsing. Find out First and Follow and construct LL(1) parser table for following Grammar: E→TE' E'→+TE'|ε T→FT' T'→*FT'|ε F→(E)|id	**07**
Q.3	**(a)**	What is Macro Expansion? Explain Advance Macro Facilities.	**07**
	(b)	Explain use and field of following tables of macro: KPDTB, SSTAB, MDT, EVTAB	**07**
		OR	
Q.3	**(a)**	Compare one pass and two pass Assembler. Write an algorithm of Single Pass Assembler.	**07**
	(b)	Explain this terms in detail : LITTAB, POOLTAB, LTORG, EQU	**07**
Q.4	**(a)**	Compare Loader and Linker. Describe "Absolute Loader" with example.	**07**
	(b)	Write three address codes and triple representation for **x=x*y*z+x*y+y*z**.	**07**
		OR	
Q.4	**(a)**	Compare Macro and Subroutine in detail.	**07**
	(b)	What is Program Relocation? Explain Self Relocating Programs and MS Dos Linker.	**07**
Q.5	**(a)**	Compare Following Terms: 1. Scanning and Parsing 2. Compiler and Interpreter	**07**
	(b)	What is Code Optimization? Explain techniques of it in brief.	**07**
		OR	

Q.5	**(a)**	Explain following terms with suitable example if required: Macro Preprocessor, Left Recursion, Forward Reference, Regular Expression	**07**
	(b)	Explain Direct linking Loader.	**07**

****