Bachelor of Science (F.Y.B.Sc.) (Part-I) Second Semester old 2SELE-T1 - Electronics Paper-I (Digital Electronics and Computer Fundamentals)

P. P. Tim	ages : e : Thre	2 aree Hours		* 0 9 4 9 *				GUG/W/18 Max. Ma	GUG/W/18/1236 Max. Marks : 50	
	Notes	s :	1. 2. 3.	All questions are comp Draw neat and labelled Use of log table calcula	ulsory and diagrams ator is allo	l cari whe wed.	ry equal marks. rever necessary.			
1.	Either									
	a)	What is number System? State any four number system with their bases and symbol							5+5	
		Explain double dabble method to convert decimal number into binary with suitable example.								
						OR				
2.	b)	What is 1's and 2's complement? Explain with examples.							4+6	
		Perform following subtraction using 1's & 2's complement.								
	D '4	i) $(101011)_2 - (1010)_2$ ii) $(1110)_2 - (101101)_2$								
	Eithe a)	r State Boolean laws for AND and OR operation. 4+4+2							4+4+2	
		State DeMorgan's theorems for two variables and prove it.								
		Draw logic diagram for the same.								
						OR				
	b)	What is Excess-3 code? Explain with suitable examples.4+							4+6	
		Construct NOT, AND, OR and NAND gate using NOR gate only.								
3.	Either									
	a)	Draw a circuit for two input TTL NAND gate and explain its construction and 6+4 working.								
		What is tristate logic? Explain the concept of tristate logic.								
						OR				
	b)	Explain construction and working of two input CMOS NOR gate. 6+4								
		Def	ïne:							
		i) iii)	No Po	vise immunity. wer dissipation.	ii iv	i) v)	Propagation delay. Fan in and fan out.			

4. Either

b)

Draw a block diagram of computer and explain function of each block state any four 8+2 a) applications of a computer.

OR

- Explain following devices in brief. Scanner. Pen drive. i) ii)
 - iii) Hard disk. iv) Laser printer.
- 5. Explain hexadecimal system with example. a)
 - Draw symbol, truth table, Boolean equation and logic diagram of Ex-OR gate. b)
 - State advantages of CMOS logic families over TTL logic families. c)
 - d) Explain types of computer.

2

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 $2^{1/2}x4$