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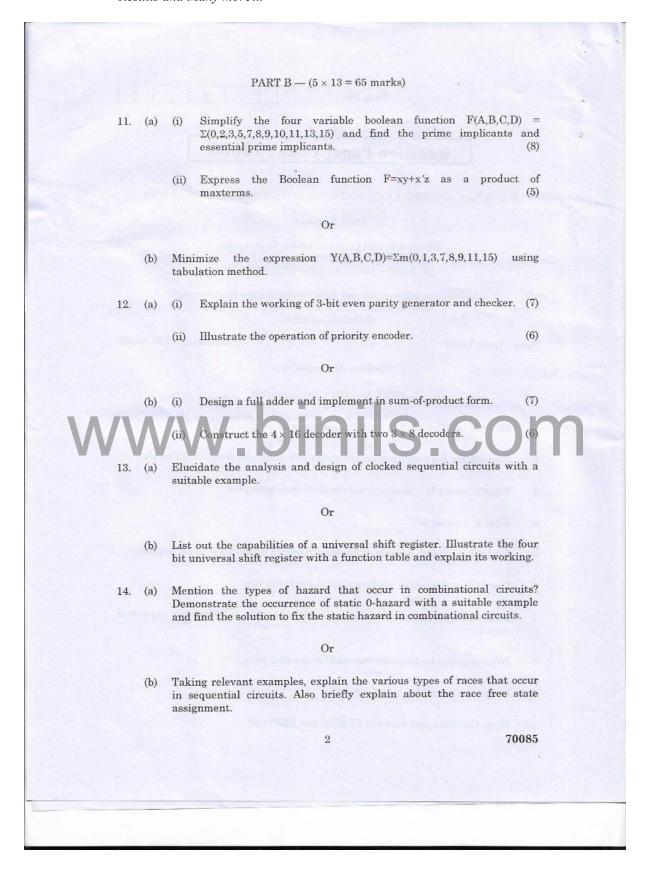
	A Colombia - Br. No. 19 Trans.
	Reg. No.:
	Question Paper Code: 70085
	B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.
	Third Semester
	Electronics and Communication Engineering
	EC 3352 — DIGITAL SYSTEMS DESIGN
	(Common to: Electronics and Telecommunication Engineering)
	(Regulations 2021) Time : Three hours Maximum : 100 marks
	Answer ALL questions.
	PART A — $(10 \times 2 = 20 \text{ marks})$
M	 Find the octal equivalent for the given decimal number (149)₁₀ Simplify the Boolean function xy+x'z+yz to a minimum number of literals.
	3. What is meant by combinational circuits? Give examples.
	4. What is a parity bit?
	5. Find the minimum number of flip flops required to build a modulo N counter.
	6. Draw the master slave configuration using D-flip flop.
	 Differentiate between critical and non-critical race in asynchronous sequential circuits.
	8. What is meant by fundamental mode sequential circuit?
	9. Define fan in and fan out of a gate?
	10. Write the difference between EPROM and EEPROM.

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15.	. (a)	Design the following sum-of-minterms using PAL.	
		$W(A,B,C,D)=\Sigma(2, 12, 13)$ $X(A,B,C,D)=\Sigma(7,8,9,10,11,12,13,14,15)$	
		$Y(A,B,C,D)=\Sigma(0,2,3,4,5,6,7,8,10,11,15)$	
		$Z(A,B,C,D)=\Sigma(1,2,8,12,13)$	
		m Or	
	(b)	(i) Draw and explain the totempole TTL output configuration. (6)	
		(ii) Compare the characteristics of RTL, TTL, ECL and CMOS logic families. (7)	
		PART C — $(1 \times 15 = 15 \text{ marks})$	
16.	(a)	Design a counter using JK flip flops with the following binary sequence: $1,2,5,7$ and repeat.	
		Or	
	(b)	Design the binary to gray code converter and draw the simplified logic diagram in sum-of-product form.	
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