

This document is a part of Main Course File

Document No.: CFM – 8



SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY
MANAGED

N. G. PATEL POLYTECHNIC

ELECTRICAL ENGINEERING DEPARTMENT

ASSIGNMENTS

Course Name (With Code): Fundamentals of Digital Electronics (DI02000161)

Semester / Year: Second/ First

Assignment Number: 1

Assignment CO Number: DI02000161.1

Sr. No.	Questions related to Course Outcomes
Part – A	Questions carrying 3 Marks
1	Perform binary subtractions: $(11010111.11110)_2 - (11101111.01110)_2 = ()_2 = ()_8 = ()_{10} = ()_{16}$
Part – B	Questions carrying 4 Marks
1	Explain weighted & non weighted code with suitable example.
Part – C	Questions carrying 7 Marks
1	Using 2's complement method, perform binary subtraction. Subtract also using direct Method & check the results. $(110011001101)_2 - (010111110)_2$

Mr. Nirav C. Pandya

Mr. Nilesh P. Prajapati

Prepared By: (Name of Faculty (ies)) with signature

Signature of Head of Department

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Course Name (With Code): Fundamentals of Digital Electronics (DI02000161)

Semester / Year: Second/ First

Assignment Number: 2

Assignment CO Number: DI02000161.2


Sr. No.	Questions related to Course Outcomes
Part – A	Questions carrying 3 Marks
1	1. Explain different types of logic gate with truth table & symbol. 2. $A+A'B = A+B$
Part – B	Questions carrying 4 Marks
1	1. Prove NAND gate as universal gate with logic circuit & truth table. 2. Explain De-Morgan's theorem in detail with logic circuit & truth table.
Part – C	Questions carrying 7 Marks
1	1. $A+BC = (A+B)(A+C)$ 2. $(AB+BC+CA)' = A'B'+B'C'+C'A'$ 3. Solve the example: $AB+A'B+AB'$


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ASSIGNMENTS			
Course Name (With Code): Fundamentals of Digital Electronics (DI02000161)			
Semester / Year: Second/ First			
Assignment Number: 3			
Assignment CO Number: DI02000161.3			
Sr. No.	Questions related to Course Outcomes		
Part – A	Questions carrying 3 Marks		
1	1. Define following term : SOP,POS, Min term, Max Term 2. Why K- map is use? What is don't care condition?		
Part – B	Questions carrying 4 Marks		
1	1. Draw basic construction of 2, 3 & 4 variable K- map. 2. Solve $f(A,B,C)=\sum m(0,1,4,5,6,7)$		
Part – C	Questions carrying 7 Marks		
1	1. $f(A,B,C,D)=\sum m(0, 1, 4, 5, 14, 15)+ d(10,11)$ and implement it by using NAND gate only. 2. $f(A,B,C,D)=\pi m(0, 1, 4, 5, 14, 15)+ d(10,11)$ and implement it by using NOR gate only.		
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Course Name (With Code): Fundamentals of Digital Electronics (DI02000161)			
Semester / Year: Second/ First			
Assignment Number: 4			
Assignment CO Number: DI02000161.4			
Sr. No.	Questions related to Course Outcomes		
Part – A	Questions carrying 3 Marks		
1	1. Explain 8:1 Mux in brief. 2. Explain 1:4 De-mux in brief.		
Part – B	Questions carrying 4 Marks		
1	1. Explain 3 to 8 line decoder in detail. 2. Explain Half Subtractor in detail.		
Part – C	Questions carrying 7 Marks		
1	1. Explain Full Subtractor with logic circuit, logic equation & truth table. 2. Explain Full Adder with logic circuit, logic equation & truth table.		
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ASSIGNMENTS			
Course Name (With Code): Fundamentals of Digital Electronics (DI02000161)			
Semester / Year: Second/ First			
Assignment Number: 5			
Assignment CO Number: DI02000161.5			
Sr. No.	Questions related to Course Outcomes		
Part – A	Questions carrying 3 Marks		
1	1. Define Flip flop. Explain SR flip flop with truth table. 2. Explain Clock RS flip flop.		
Part – B	Questions carrying 4 Marks		
1	1. Compare Combinational & Sequential circuits. 2. Explain D & T Flip flop with circuit & truth table.		
Part – C	Questions carrying 7 Marks		
1	1. What is race around condition? Explain JK flip flop in detail. 2. Short note on Master Slave JK flip flop.		
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