Review Test Submission: Midterm Exam 1

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Course	Spring 2021 TTU Modern Digital System Design (ECE-2372-D01)
Test	Midterm Exam 1
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Status	Completed
Attempt Score	104 out of 104 points
Time Elapsed	24 minutes out of 25 minutes

Question 1 4 out of 4 points

What fundamental law of Boolean algebra is demonstrated by the given algebraic manipulation?

$((A + C'D)')' = A + C'D$

Question 2 4 out of 4 points

What is the decimal number 236 represented in 8-4-2-1 weighted code?

Question 3 4 out of 4 points

What is the decimal equivalent of the binary number 100111?

Question 4 4 out of 4 points

What is the decimal number 38 represented in Gray code?

Question 5 4 out of 4 points

What is the Boolean expression that is implemented in the given Verilog module?

```
module top(A, B, C, D, Z);      input A, B, C, D;      output Z;      assign Z = ~A | B & ~C & ~D | A & ~C & D;    endmodule
```

Question 6 4 out of 4 points

What is the binary equivalent of the hexadecimal number A8?

Question 7 4 out of 4 points

How are logic circuits represented in Verilog?

Question 8 4 out of 4 points

What logical operation is represented by the given truth table?

A	B	Z
0	0	1
0	1	1
1	0	1
1	1	0

Question 9 4 out of 4 points

What is the decimal equivalent of the hexadecimal number 1F1?

Question 10 4 out of 4 points

What logical operation is represented by the given truth table?

A	B	Z
0	0	0
0	1	1
1	0	1
1	1	1

Question 11 4 out of 4 points

What is the number 157 represented in 6-3-1-1 weighted code?

Question 12 4 out of 4 points

What fundamental law of Boolean algebra is demonstrated by the given algebraic manipulation?

$(A' + B')' = AB$

Question 13 4 out of 4 points

What is the hexadecimal equivalent of the decimal number 165?

Question 14 4 out of 4 points

What logical operation is represented by the given truth table?

A	B	Z
0	0	0
0	1	0
1	0	0
1	1	1

Question 15 4 out of 4 points

What fundamental law of Boolean algebra is demonstrated by the given algebraic manipulation?

$AB' + C + B'D' + (AB' + C + B'D')' = 1$

Question 16 4 out of 4 points

In the given Verilog module, is Port C of submodule2 an input port or an output port?

```
module top(A, B, C, F);      input A, B, C;      output F;        wire W1, W2;        submodule1 U0(.A(A), .B(B), .C(W1), .Z(W2));
```

Question 17 4 out of 4 points

What fundamental law of Boolean algebra is demonstrated by the given algebraic manipulation?

$(A'B + C'D')0 = 0$

Question 18 4 out of 4 points

What is the complement of the Boolean expression $A + (B'C + D)$?

Question 19 4 out of 4 points

What logical operation is represented by the given truth table?

A	B	Z
0	0	0
0	1	1
1	0	1
1	1	0

Question 20 4 out of 4 points

What is the binary equivalent of the decimal number 18?

Question 21 4 out of 4 points

What fundamental law of Boolean algebra is demonstrated by the given algebraic manipulation?

$A'D(BC + B'C + B'C') = A'BCD + A'B'CD + A'B'C'D$

Question 22 4 out of 4 points

What is the hexadecimal equivalent of the binary number 101001110?

Question 23 4 out of 4 points

What fundamental law of Boolean algebra is demonstrated in the given algebraic manipulation?

$A'B'C + DE' = (A'B'C + D)(A'B'C + E')$

Question 24 4 out of 4 points

What logical operation is represented by the given truth table?

A	B	Z
0	0	1
0	1	0
1	0	0
1	1	0

Question 25

4 out of 4 points

In the Verilog code snippet shown below if A = 1, B = 0, and C = 1, what will the output of the module be?

```
module top(A, B, C, F, Z);      input A, B, C;      output F, Z;        assign F = A & B | ~C;      assign Z = ~A & B | C;    endmodule
```

Question 26

4 out of 4 points

What fundamental law of Boolean algebra is demonstrated in the given algebraic manipulation?

$A' + BC'D + A' + BC'D = A' + BC'D$

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