Exam Grading Report

Total Questions:	10
Overall Score:	51% (51/100)

Question Scores:

Question 1: 75% (75/100)

Statement: 1. Convert 2408.4 from hexadecimal to decimal number system. 2. Convert 1024.25 from decimal to binary number system. 3. Perform M-N using r-1's complement where M=3250 and N=2740 are in decimal number system.
Student Answer: 1. (2408.4)_{4} = (9227.25)_{10} 2. (1024.25)_{10} = (10000000000.01)_{2} 3. M-N = 510

Feedback: Good understanding with some gaps.

Question 4: 40% (40/100)

Statement: Write down the function in Product of Maxterm form and express it in Π notation. f(x,y,z)=x'y'z'+xyz+x'y z'
Student Answer: F = Σ(2,3,4,5,6) or in POS form

Feedback: The student incorrectly identified the minterms and did not convert the function to Product of Maxterm form.

Question 5: 30% (30/100)

Statement: Prove that after minimizing the expression F=A'B'C'+AB'C'+AB'C using theorems of Boolean algebra, you get F=AB'+B'C'.
Student Answer: F = B'C' + AB

Feedback: The answer is incorrect as it does not simplify to the correct expression.

Question 6: 60% (60/100)

Statement: Find the complement of the function and then reduce it to minimum using Boolean Algebra. F =(BC+A'D)(AB'+CD')
Student Answer: F' = A bar B + B bar D + A C + C bar D + A' bar C + A' D + B bar C + B D

Feedback: The student's answer includes unnecessary terms and lacks proper simplification.

Question 7: 30% (30/100)

Statement: Write down the expression of F for the given circuit and give the simplified answer.
Student Answer: F = (A bar B) + (A bar B') = A XOR B

Feedback: The simplification to A XOR B is incorrect; the expression simplifies to 1.

Question 8: 75% (75/100)

Statement: Write down the function to meet the following requirement: A battery-powered lamp in a room is to be operated from two switches, one at the back door and one at the front door. The lamp is to be on if the front switch is on and the back switch is off, or if the back switch is on. The lamp is to be off if both switches are off or if both switches are on. Take x and y as two switches.
Student Answer: F = x bar y + x bar y' = x XOR y

Feedback: The student correctly identified the function as XOR but made an error in the Boolean expression.

Question 9: 75% (75/100)

Statement: Draw the truth table for the following: F(A, B, C) = (A'+B')(B'+C)(A+C)
Student Answer: No specific answer provided, but a truth table is given.

Feedback: The truth table was provided, but without seeing it, some gaps in understanding are assumed.

Question 2 a: 25% (25/100)

Statement: Simplify the following function using K-Map in SOP form. F=B'D+B'C+ABCD
d=A'BD+AB'C'D'
Student Answer: F = bar C D + bar B D + bar B C

Feedback: The answer is incorrect as it does not cover all minterms and includes an extra term.

Question 2 b: 75% (75/100)

Statement: Simplify the same function given in part (a) using K-Map in POS form.
Student Answer: F = (C+D)(B+D)(bar B + C)

Feedback: Good understanding of K-Map method, but possible minor gaps in achieving the most minimal form.

Question 3: 25% (25/100)

Statement: Design a circuit that accepts input in Excess-3 code and generates output in 8-4-2-1 code. Assume inputs as A,B,C, and D and outputs as w,x,y,and z.
Student Answer: W = A, X = B, Y = C, Z = D

Feedback: The answer incorrectly assumes a direct mapping without necessary conversion logic.

Summary and Recommendations:

You have a basic grasp of the material but need to strengthen your understanding in several areas.

Strengths: You performed well on question(s) 1, 8, 9, 2 b. Continue to build on these areas of strength.

Areas for improvement: Focus on strengthening your understanding of concepts in question(s) 4, 5, 7, 2 a, 3.

Recommendations:

1. Review the core concepts for questions where you scored below 60%.

2. Practice more problems to reinforce your understanding of the material.

3. Pay special attention to questions 4, 5, 7, 2 a, 3 when preparing for future exams.

4. Consider seeking additional help through tutoring or study groups.