Part I and Overall Report (40 pts)

Report and Organization (25 pts)

Executive Summary
- Identifies decision variables, constraints, and objective in clear language (as if explaining to a politician, not an engineer) /3
- Discusses tools and approach to solving problem /3
- List of Key Assumptions /3
- Summarizes Key Findings and Recommendations /3
- Clearly states new skills or concepts learned from project /3

Table of Contents /1
Cover Sheet /1
Pages Numbered /1
All answers to questions are clearly marked, well organized, and are presented in a logical order /1
All Tables, Figures, and Excel Print Outs Clearly Labeled
- Units Shown /1
- Organized Logically and Neatly /1
- Detailed & Informative Caption /1
- Notes explaining all Excel Formulas with cell references (including Solver Window) /1
Includes Sensitivity Report for Part I and Part III /2

Algebraic Model (5 pts)

Objective function /1
Land constraint /1
Water constraint /1
Quota constraint /1
Non-negativity constraint /1

Optimal Solution (12 pts)

Correct decision variables values /2
Solver window (the LHS and RHS of equations should be explained! You should specify what it represents, the units used, and the region. For example, if the RHS is $H4:$H25 you could say that this represents the available land in 1000 feddans in the upper region) /6
Correct Final answer /3
**Part II (15 pts)**

**Question 1 (5 pts)**
- Correct Profit for Wheat /1
- Correct Profit for Maize /1
- Appropriate Advice /2
- At least one reasonable non-economic consideration /1

**Question 2 (5 pts)**
- Correct Answer /3
- Explains how Sensitivity Report was used /2

**Question 3 (5 pts)**

**Part III (15 pts)**

**Reformulate the Problem (7 pts)**
- Appropriate change to land availability /2
- Appropriate change to quotas /2
- Correct Optimal Value /3

**Question 4 (4 pts)**
- Correct Answer /2
- Support from Sensitivity Report /2

**Question 5 (4 pts)**
- Identifies correct crop /1
- Correct Answer /3

**Part IV (30 pts)**

**Question 6 (4 pts)**
- At least two reasonable answers provided /4

**Question 7 (6 pts)**
- Correct Approach Shown/Explained /3
- Correct Answer /3

**Question 8 (6 pts)**
- Correct Allocation of Water /3
- Correct Profit /3

**Question 9 (14 pts)**
- Selection of Correct Dam /3
- Present Worth Analysis /4
- Annual Cash Flow Analysis /4
- Cash Flow Diagram for at least one dam /3