**1111 MATH**

**Textbook: Discrete Mathematics and Its Applications, 7th edition**

**By Kenneth H. Rosen**

**Introduction to Number System**

* **Binary System: Slides (1)**
* **Octal System: Slides (2)**
* **Hexadecimal System: Slides (3)**

**You Can read Chapter 4 Section 2 (Integer Representation and Algorithms)**

**Logic**

* **Propositional Logic: Slides (4)**
* **Propositional Equivalences: Slides (5)**

**You Can read Chapter 1 Section 1.1 and 1.3 (The Foundations: Logic and Proofs)**

**Sets**

* **Sets: Slides (6)**
* **Set operations: Slides (7)**

**You Can read Chapter 2 Section 2.1 and 2.3 (Basic Structures: Sets, Functions, Sequences, Sums, and Matrices)**

**Boolean Algebra**

* **Boolean Functions: Slides (8)**
* **Representing Boolean Functions: Slides (9)**
* **Logic Gates: Slides (10)**
* **Minimization of Circuits: Slides (11)**

**You Can read Chapter 12 Section 12.1, 12.2, 12.3 and 12.4 (Boolean Algebra)**

**Basic Concepts of Graph Theory**

* **Graphs and Graph Models: Slides (12)**
* **Graph Terminology and special Types of Graphs: Slides (13)**
* **Connectivity: Slides (14)**

**You Can read Chapter 10 Section 10.1, 10.2 and 10.4 (Graphs)**

**Exercises Number**

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| **1)** | **Introduction to Number System** | **Binary System: Slides (1) P255** | **1, 2, 4, 21** |
| **Octal System: Slides (2) P255** | **5, 6, 17, 23(Just the sum)** |
| **Hexadecimal System: Slides (3) P255** | **7, 8, 10, 11, 12, 24 (Just the sum)** |
| **2)** | **Logic** | **Propositional Logic: Slides (4) P 12** | **2, 3, 8(a,d,g), 11(a, c, e), 17, 28, 29(a-c), 31(c,e), 35(b,e)** |
| **Propositional Equivalences: Slides (5) P 34** | **5, 7, 9(c), 10(c), 16, 19, 22** |
| **3)** | **Sets** | **Sets: Slides (6) P 125** | **1, 2(a, b), 5-8, 10, 19, 21, 27(b)** |
| **Set operations: Slides (7) P136** | **4, 14, 15, 19, 25, 26, 50(a, b, c), 51(a, b, c), 52(a, b), 53(a, b)** |
| **4)** | **Boolean Algebra** | **Boolean Functions: Slides (8) P 818** | **1-4, 5(b), 9, 11, 20, 28** |
| **Representing Boolean Functions: Slides (9) P 822** | **1-3** |
| **Logic Gates: Slides (10) P 827** | **1-6** |
| **Minimization of Circuits: Slides (11) P 841** | **1, 2, 3, 4(c), 5, 6(a, b), 12-14** |
| **5)** | **Basic Concepts of Graph Theory** | **Graphs and Graph Models: Slides (12) P 649** | **3-10** |
| **Graph Terminology and special Types of Graphs: Slides (13) P 665** | **1-5, 20(a-d), 21-25, 36-41, 42(a-c)** |
| **Connectivity: Slides (14) P 689** | **1-6** |