## Unit II: Combinational Circuits

### 2-Mark Questions

1. What is a Half Adder?
2. Define Multiplexer.
3. What is the function of a Magnitude Comparator?
4. Describe the operation of a Binary to Gray code converter.
5. What is an Encoder?

### 14-Mark Questions

1. Explain the design and implementation of a 4-bit binary adder. Discuss the importance of carry propagation in the design.
2. Discuss the operation of a 4-to-16 decoder and design a circuit using two 3-to-8 decoders.
3. Describe the working of a Parity Checker. Design a parity generator and checker for an 8-bit data stream.
4. Explain the concept of code converters with a focus on Binary to Gray and Gray to Binary converters. Provide design steps.
5. Design and implement a 4-bit Magnitude Comparator. Provide a detailed explanation of its logic and functionality.