

5. (20%) Figure 4 shows a block diagram representation of the 555 timer circuit.
- (1) Implement a monostable multivibrator with external elements and describe how it operates. (10%)
 - (2) Implement an astable multivibrator with external elements and describe how it operates. (10%)

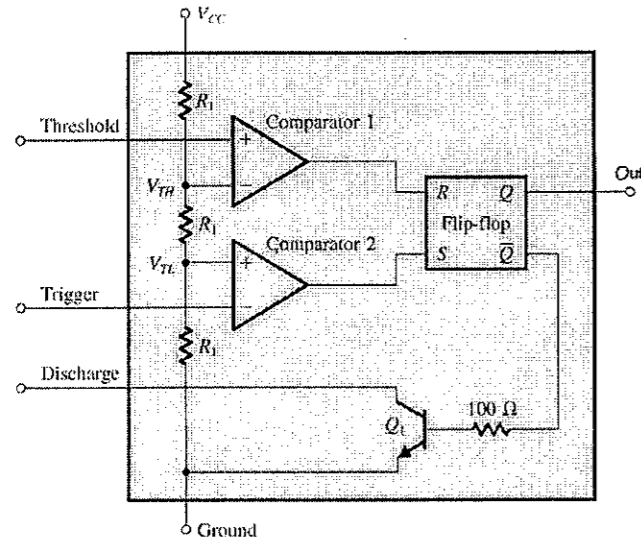


Figure 4

6. (10%) Draw a cascode amplifier implemented by BiCMOS configuration, and describe its key advantages.

7. (15%)
 - (1) 列舉至少三種不同的電阻種類並比較其特性。(5%)
 - (2) 列舉至少三種不同的電容種類並比較其特性。(5%)
 - (3) 如果需要能耐受大電流且具高精密度的電阻，哪一種比較合適？(5%)