1. Given a digital system with VDD = 5V, what analog-to-digital threshold T should be selected to maximize the noise margins. You should assume an ideal model where x < T ⇒ 0 and x < T ⇒ 1.

T = 2.5

1. Given that a digital system with VDD = 1.8V, and an analog-to-digital threshold T = 1.0V such that x < T ⇒ 0 and x > T ⇒ 1. Sketch the input/output relationship for 0 ≤ V1.5 ≤ 1.8V where Vout = 0V for ‘0’ and Vout = 1.8V for ‘1’.

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Vin >1.0V | 0 | 0V |
| Vin <1.0V | 1 | 1.8V |

* 1. 0
  2. 1
  3. 0
  4. 1
  5. ?
  6. 76D19BF0

1. A
   1. ?
   2. 001001000110100001110010100110001
2. A
   1. ?
   2. ?
3. A
   1. 0111,1011; 7B; 2
   2. ; 7B; 2
   3. 0001, 0010, 0011; 123; 3
   4. ; 313233; 8
4. A
   1. No can do
   2. 1000,0101; 85;2
   3. No can do
   4. ; 2D313233; 8
5. 56789
   1. 1101,1101,1101,0101; DDD5; 4
   2. ; 0DDD5; 5
   3. 0101, 0110, 0111, 1000, 1001; 56789;3
   4. ; 3536373839;8
   5. ?
6. A
7. A
8. a