

Your answers must be as brief as possible. (Technical English reading is one part of this examination, however, you can answer in Chinese.)

1. Explain why "a capacitor acts as a dc open circuit". (5%)
2. The standard residential ac power source in Taiwan is 110V. Is that the average, maximum, or rms value? (5%)
3. Draw the waveforms of a balanced three-phase circuit. (5%)
4. What is meant by "passive sign convention"? (5%)
5. What is a "Bode plot"? (5%)
6. How to obtain a low-pass filter with a simple RL circuit? (5%)
7. What is meant by the "damping ratio" of a second-order circuit? (5%)
8. What is meant by "continuity of inductor current"? (5%)
9. What is a "linear circuit"? (5%)
10. What is meant by "dot convention" in a pair of coupling coils? (5%)
11. What is the distinction between intrinsic and extrinsic semiconductors? (10%)
12. Draw the circuit configuration of an emitter-coupled pair? (10%)
13. What is the difference between MESFET and MOSFET? (10%)
14. Why analog-to-digital converters are required in signal processing systems? (10%)
15. Draw the cross section view of a CMOS inverter implemented using N-well process. (10%)