一、解释题（本大题共 10 小题，每小题 3 分，共 30 分）。提示：解释每小题所给名词的含义，若解释正确则给分，若解释错误则无分，若解释不准确或不全面，则酌情扣分。

1. What is an ISA?
2. Name and explain the seven commonly accepted layers of the Computer Level Hierarchy.
3. What is a bus cycle?
4. What is assembler?
5. What are immediate, direct, register, indirect, register indirect, and indexed addressing.
6. What is speedup?
7. What is effective access time (EAT)?
8. What is a dirty block?
9. Define the terms seek time, rotational delay, and transfer time.
10. Name the four types of I/O architectures

二、填空题（本大题共 10 空，每空 2 分，共 20 分）。

1. Name the three basic components of every computer _____, _____, _____.
2. Flynn’s taxonomy classifies computer architectures based on two properties. They are _____, _____.
3. What technology spawned the development of microcomputers _____.
4. The ALU know which function to perform because _____.
5. The three forms of locality _____, _____, _____.

三、判断改错题（本大题共 5 小题，每小题 2 分，共 10 分）提示：正确打✓，错误打×，将其结果填写在下表中。

1. One million bytes can be represented as 1000K bytes.
2. If a computer uses hardwired control, the micro-program determines the instruction set for the machine. This instruction set can never be changed unless the architecture is redesigned.
3. Accumulator architectures use sets of general purpose registers to store operands.
4. L1 cache is faster than L2 cache.
5. RAID level 5 offers the best economy while providing adequate redundancy

四、问答题（本大题共 5 小题，每小题 6 分，共 30 分）。

1. What is the importance of the Principle of Equivalence of Hardware and Software?
2. What is the difference between a point-to-point bus and a multipoint bus?

3. What does Amdahl’s Law tell us about performance optimization?

4. Explain how fully associative cache is different from direct mapped cache.

5. How is channel I/O similar to DMA?

五、计算题（本大题共 1 小题，每小题 10 分，共 10 分）。提示：每小题给出了一个程序设计要求，请按照要求写出源程序代码，如果源程序代码中出现语法错误或逻辑错误，则酌情扣分。

1.（共10分）Use Huffman algorithm to create Huffman codes for the following rhyme. Use <ws> for whitespace instead of underscores:

STAR_LIGHT_STAR_BRIGHT_
FIRST_STAR_I_SEE_TONIGHT