

※ 考生請注意：本試題不可使用計算機。 請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Explain the following terms (8%) and describe how they can be used in biomedical engineering (12%):
 - (1) Cloud computing
 - (2) GPU computing
 - (3) Virtual reality
 - (4) Internet of Things
2. (20%) Write a computer program to perform binary search on a one-dimensional array. You may use C, C++, or pseudocode.
3. (20%) The Department of Health and Welfare is proposing to establish a mechanism to connect all the databases for medical records in the medical centers of Taiwan, so medical records can be shared and accessed between different centers. Discuss what kind of challenges will be encountered during such developments and how to address such challenges. (List at least two challenges.)
4. (20%) You work for a biomedical instrumentation company. Your boss asks you to design the software for an instrument that records, stores and analyzes a certain type of biomedical signal for clinical use. What programming language would you recommend to use? Why?
5. (20%) Johnny and Tommy are debating over the choice of programming languages. Tommy thinks that, as long as the underlying algorithm is good, choice of language does not make much difference. Johnny argues that, a good language can make up for the performance limitation due to a poor algorithm, so that choice of programming languages could sometimes be even more important than the algorithm design. Which statement do you agree with? Explain why.