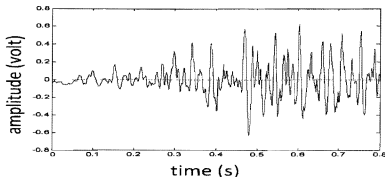


※ 考生請注意：本試題 可 不可 使用計算機

- (10%) Please describe the main components in augmented reality (AR) and virtual reality (VR). Make a comparison between these two systems.
- (10%) What is user-defined data type? Why is it necessary or useful in programming language?
- (10%) What is Object-Oriented programming (OOP)? Please give examples to access or store the data in your familiar OOP language. Please describe the main advantages of applying OOP.
- (10%) Briefly describe CISC and RISC architectures and summarize their differences.
- (25%) Please briefly describe the following terms:  
(a) Cloud computing; (b) Wikipedia; (c) Web 2.0; (d) Web log (or blog); (e) Bioinformatics
- (15%) A medical doctor at National Cheng Kung University Hospital comes out the idea of using radio frequency identification (RFID) device incorporated with other wireless mobile devices to (a) read case history, (b) input physiological data (such as blood pressure, body temperature), and (c) prevent misuse of medicine in each ward.  
Can you propose a schematic diagram for this purpose? (Note: This is a "free-style" question. Just utilize what you have learned with some imagination).
- (20%) Figure 1 is a recording of electromyography (EMG), a signal originated from human muscle under certain working load. The muscle force can be estimated from the absolute value of EMG.
  - Please write a program using your familiar program language to determine the peak value and when the peak muscle force occurs. (Hint: remember to take absolute value)
  - Another approach is to smooth the EMG data and measure the maximum value. Please write another program using for-loop to perform a 3-point moving average of the absolute EMG data, i.e. the output is the average of 3 data points from the first point to the last point of absolute EMG.
  - Draw flowchart to describe your algorithms. You can give any assumptions if you wish.



(Figure 1)