

招生學年度	九十七	招生類別	碩士在職專班
系所班別	資訊工程學系碩士在職專班、電機工程學系碩士在職專班		
科目	計算機概論		
注意事項	禁用計算機		

1. (5 points) Show that  $P \rightarrow Q$  is logically equivalent to  $\sim P \vee Q$  by using truth tables.
2. (10 points) Write a complete C program to read in two integers and then write out the **greatest common divider** of those two numbers.
3. (10 points) Convert to the **postfix** expression:  $( 5 * (( 9 * 8 ) + ( 7 * ( 4 + 6 ) ) ) )$
4. (10 points) Which sorting algorithm will have the best performance when the given data is almost sorted? Explain your answer.
5. (15 points) (a) What is a “**cold boot**”? What is a “**warm boot**”? (5 points) (b) Describe the steps that a personal computer boots up. (10 points)
6. (15 points) What advantages can we benefit from **object-oriented programming languages**?
7. (15 points) Draw a block diagram to illustrate the components of a computer.
8. (20 points) What are the differences between a **stack** and a **queue**? What is a **priority queue**?