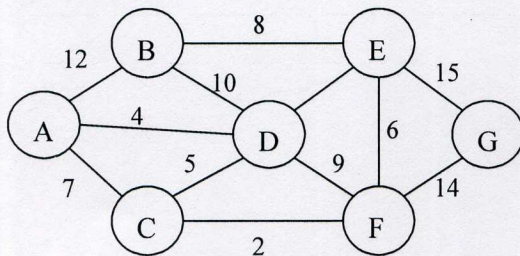


慈濟大學 99 學年度
研究所碩士班暨在職專班招生考試命題紙

科目：計算機概論

共1頁

- (25%) Please answer the following questions.
 - Explain what a virtual machine is and its advantages.
 - Describe the process when a system call is invoked.
 - What is a distributed operating system?
 - What is virtual memory? Describe how to implement this technique and its limitation.
 - Describe how an operating system performs context switching in CPU scheduling.
- (5%) Explain how to perform collision detection with CSMA/CD.
 - (5%) What is the role of a proxy server in computer network?
- (15%) Use a programming language like C, C++, BASIC, or JAVA to define a binary search tree. Give examples to show how to delete a node from the tree. Show its time complexity and explain why.
- (20%) Show the steps to obtain the minimal cost spanning tree from the following graph by using
 - Prim's algorithm
 - Kruskal's algorithm



- (15%) Write the algorithm of *recursive* Merge Sort. Analyze its time complexity and space complexity.
- (15%) Use a programming language like C, C++, BASIC, or JAVA to implement the operations of a linked-list based circular queue.