國立成功大學七十六學年度資訊工程研究所碩士班研究所入學考試(計算機概論 試題)

1. What are the codes for character 'Z' in (a) ASCII code (b) EBCDIC code (c) BCDIC code (d) IBM 029 card code respectively. (12%)

2. Brifely describe the organization or structure of the indexed sequential file. (16%)

3. Terminal Controllers can be divided into two general classes, multiplexer and concentrators. What are the differences between the multiplexers and concentrators. (16%)

4. The 'Breadth-first Search' technique is widely used for graph traversal. Essentially the 'Breadth-first Search' begins at a given node and then proceed to all the nodes directly connected to that node (a) Write a procedure for the "Breadth-first Search' by using a queue to keep track of nodes that are visited during the breadth-first search. (b) Give an example to illustrite your procedure. (Assume the graph is represented by its adjocency lists) (20%)

5. A 8×8 array maze of 0s and 1s represent a maze in which a traveler must find a path from maze[1,1] to maze[8,8]. The traveler may move from a square into any adjacent square in the same row or column, but may not skip over any squares or move diagonally. In addition, the traveler may not move into any square that contains a 1, maze[1,1] and maze[8,8] contain 0s (a) Write a routine that accepts such a maze and either print a message that no path through the maze exists or prints a list of positions representing a path from [1,1] to [8,8] (b) Give an example to show how your routine works. (20%)

6. Give an example to explain "Digital Search Trees" and "Tries". (16%)