

科目	計算機概論	適用系所	通訊工程學系	時間	100 分鐘
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※請務必在答案卷作答區內作答。 共 2 頁第 1 頁

- Given a certain time period, the order for a computer to access to its hard drive tracks is: 49, 91, 22, 61, 33, and 35, where the Read/Write header is positioned on track 18 at the very beginning. Please calculate the needed amount of track movement for each of the following disk schedulings.
 - Circular SCAN disk scheduling (6%);
 - Shortest-Seek-Time-First (SSTF) disk scheduling (6%);
 - LOOK scheduling (6%).
- Assume one day you jump in a computer, hook on the Internet, and find your computer IP address is 180.15.225.14 with subnet mask 255.255.248.0. Try to answer the following questions in detail.
 - What class network is your computer in now (2%)?
 - How many subnets are divided from the class network to which you are connected (10%)?
 - How many node addresses are truly available for a subnet (5%)?
- Please make use of Dijkstra's method to show how the node 4 in Fig. 1 can get the shortest path to each of the other nodes (20%).

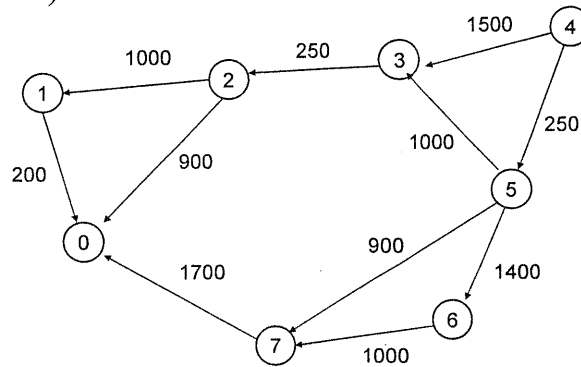
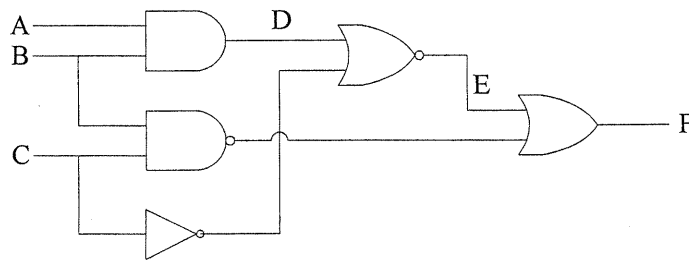


Fig. 1

- The following figure shows a logic diagram. Try to answer the following questions (a) and (b):



- Please fill out the outcome values of points D, E, F for the following different combinations of A, B, and C (9%).

ABC	D	E	F
000			
010			
110			

(b) What is the simplest Sum of Product of D, E, F depending on A, B, C? (4% for each row)

D =	
E =	
F =	

5. Explain "Fist Come, First Serve" and "Divide and Conquer" (4% for each answer and each answer should contain 15 words at least).

6. Given three questions (a), (b), and (c) below, give your answers for each question:

- Are there any mathematical problems can be solved by computers? (Yes/No:1%; more detailed explanations or examples: 3%)
- Are there any mathematical problems cannot be solved by computers? (Yes/No:1%; more detailed explanations or examples: 5%)
- Are there any mathematical problems cannot be represented by computers? (Yes/No:1%; more detailed explanations or examples: 5%)