

1. (a) 試以圖 1 之組裝圖說明 Vectored Interrupt 之工作原理。
 (20%) (b) 試說明微處理器對一 Interrupt Request 之反應程序。
 (c) 試說明 Priority Interrupt 之應用場合。
 (d) 試以圖 2 之 Priority encoder 的 Truth Table 來說明 Hardware Priority Interrupt Unit 之工作原理。

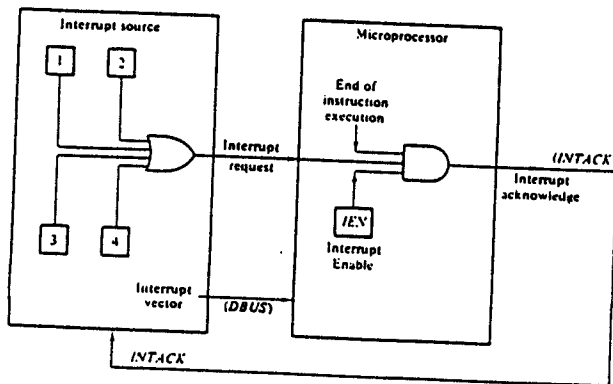
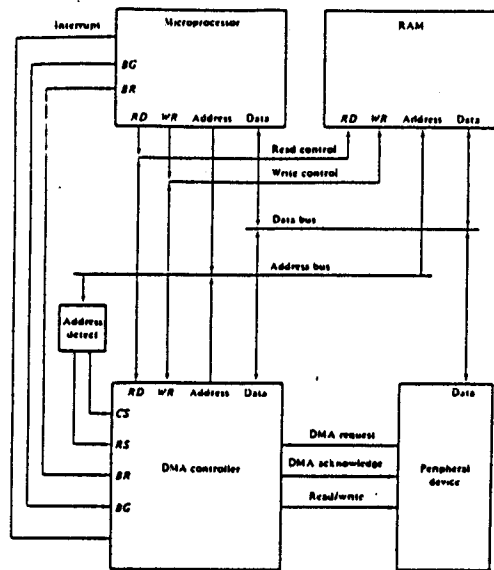


圖 1.

Input (Interrupt source)				Output (Partial address)		Output (Interrupt request)
I_0	I_1	I_2	I_3	x	y	R
1	X	X	X	0	0	1
0	1	X	X	0	1	1
0	0	1	X	1	0	1
0	0	0	1	1	1	1
0	0	0	0	X	X	0

圖 2.

2. (a) 何謂 Local Area Network (LAN) ;
 (20%) (b) Ethernet 是一相當有名的 LAN, 試給其結構方塊圖並說明其工作原理。
 (c) 試詳細說明 Loader 勿 Linker。
 (d) 試以圖 3 所示微電腦系統中 DMA Transfer 之方塊圖說明 DMA 之工作原理。



3.

3. A Combinational circuit is defined by the functions :
 (10%) $F_1(A,B,C) = \Sigma(3,5,6,7)$, $F_2(A,B,C) = \Sigma(0,2,4,7)$
 Implement the circuit with a PLA having three inputs, four product terms, and two outputs.

4. Define the following terms :
 (20%) a) Look Ahead Adder b) clock skew c) radix sort
 d) hash collision e) context free Grammar

5. Write a program to solve the towers of Hanoi problems by
 (15%) using any high level programming language.

6. For the graph of Fig-4.
 (15%) a) Find its adjacency matrix
 b) Find its path matrix using powers of the adjacency matrix
 c) Find its path matrix using Warshall's Algorithm

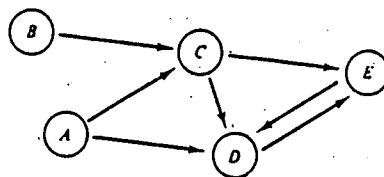


Fig-4