

國立臺北大學 106 學年度碩士班一般入學考試試題

系（所）組別：電機工程學系乙組(電腦工程組)

科目：計算機概論 A

第 1 頁 共 1 頁

☐可 ☒不可使用計算機

1. Represent the decimal number 253 in
 - (a) Binary number. (5%)
 - (b) Octal number. (5%)
 - (c) Hexadecimal number. (5%)
2. A signed number system is shown in Fig. 1.
 - (a) Find the binary number of the decimal number -101. (10%)
 - (b) Describe the number overflow for the system. (10%)

Decimal	Binary
-128	1000 0000
-127	1000 0001
-126	1000 0010
...	...
-2	1111 1110
-1	1111 1111
0	0000 0000
+1	0000 0001
+2	0000 0010
...	...
+127	0111 1111

Fig. 1

3. A logic circuit is shown in Fig. 2.
 - (a) Complete the truth table for the circuit with inputs x, y, z and outputs S, C . (10%)
 - (b) Describe the function of the circuit. (5%)

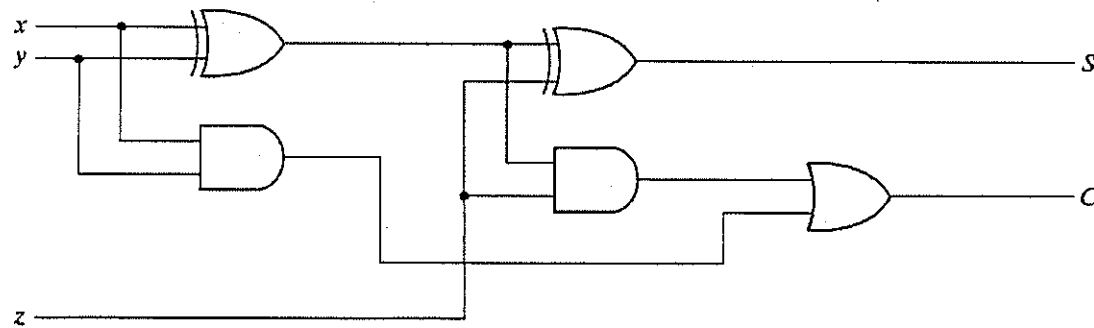


Fig. 2

4. For a logic circuit shown in Fig. 3, describe the output Q and Q' for
 - (a) $R=1$ and $S=0$. (5%)
 - (b) $R=0$ and $S=1$. (5%)
 - (c) $R=0$ and $S=0$. (5%)

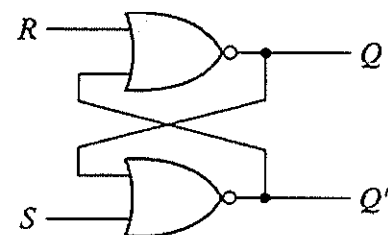


Fig. 3

5. What does it mean to say that a processor is 1.4GHz? (10%)
6. What is the function of the ALU? (10%)
7. Present the following prefixes in the power of 10 and power of 2.
 - (a) Mega. (5%)
 - (b) Giga. (5%)
 - (c) Tera. (5%)

試題隨卷繳交