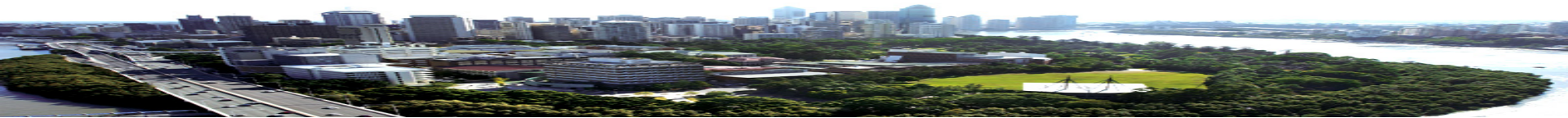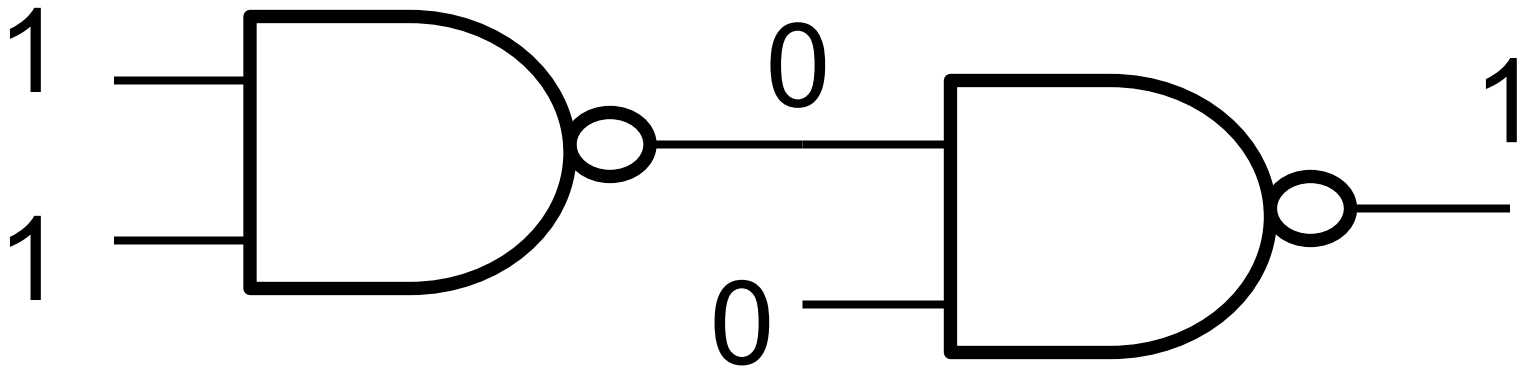# ENB 350 Real-time Computer based systems

Pre-requisite knowledge Test

What is the output?

What is it enough for?

The output current from a typical CMOS microcontroller digital output line is enough for

- An LED ? **Yes** or No

- A small dc motor ?   Yes or **No**
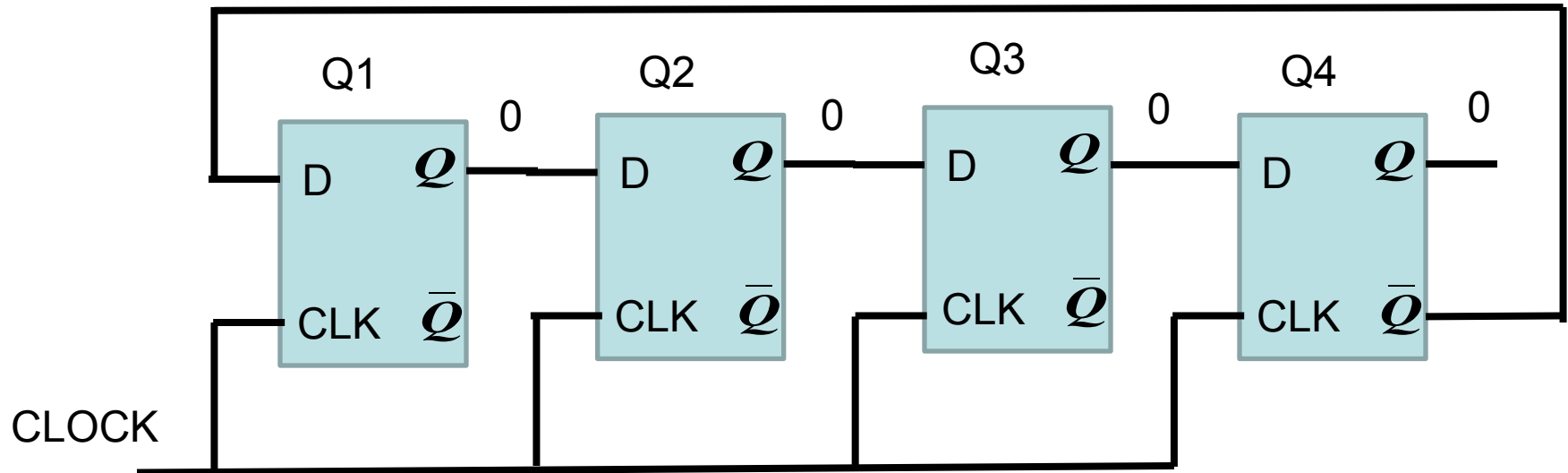
- A solenoid ? Yes or **No**

Complete the Truth Table

• For a full adder.

A	B	Carry In	Sum	Carry out
0	0	0	**0**	**0**
0	1	1	**0**	1
1	0	0	1	0
1	1	1	1	1

What is the next state?

Present state Q1 Q2 Q3 Q4 is 0 0 0 0
Next state = 1 0 0 0

What is in a CPU?

The central processing unit (CPU) of a microprocessor comprises of

- Arithmetic logic unit (<u>Yes</u> or No)
- Control logic (<u>Yes</u> or No)
- System clock (Yes or <u>No</u>)
- Memory (Yes or <u>No</u>)
- Registers (<u>Yes</u> or No)

A program counter keeps

A. data that needs to be incremented by 1

B. the size of the program

C. the number of running programs

D. the address of the next instruction ✓

E. None of the above

What is this number?

In 8 bit   2s complement notation it is

11111111
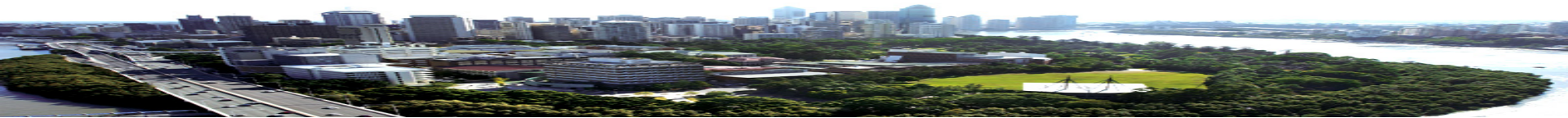
In decimal notation it is

-1

Are these key words in ANSI C?

for	✓
if	✓
waitfor	
while	✓
printf	
costate	
end	

The & operator in C is

A. addition

B. logical AND

C. bitwise AND   ✓

D. concatenation

E. None of the above

What is the output?

```c
#include <stdio.h>
void main()
{
extern void swap();
int a,b;
a =10; b=20;
swap(a,b);
printf("a = %d\n",a);
exit(0);
}
```

```c
void swap(int x, int y)
{
int temp;
temp = x;
x = y;
y = temp;
}
```

a = 10