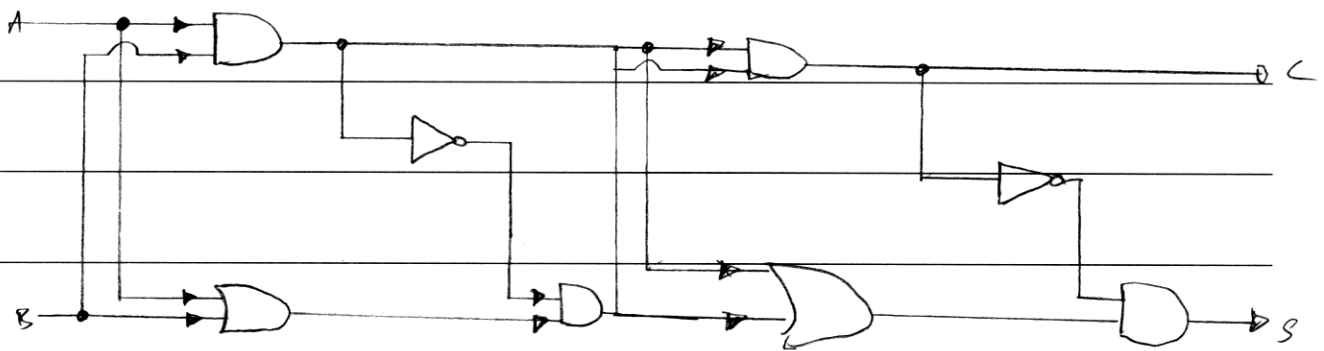


Q25

a) i)

A	B	CARRY	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	1

ii) To construct a full adder, all you have to do is combine two half adders together.




b) Integer representation represents whole numbers, positive and negative including zero. Whereas floating point numbers represent numbers with decimals and can be written in the form of the exponent and mantissa. Integer representation



would be suitable in displaying numbers in situations where the number is independent and primary.

An example would be in seating arrangements, giving people an exact number in which to sit on.

Floating point would be suitable when you want to find something in a multi-dimensional array whereby the object can be identified via pointers. It would also be appropriate when you have to reduce a ~~big~~ large number into scientific notation.

c) i) The car is moving diagonal up right. 
X is moving to the right 13mm and
Y is moving up 15mm.

ii)

$$\begin{array}{r} 13 \\ 15 \\ \hline 28 \end{array}$$
$$\begin{array}{r} 2 \\ 13 \overline{) 28} \text{ r } 2 \end{array}$$

The remainder that will be used for this data stream would be 2.



c) (ii) BEGIN

READ Message sent by transmitter

count length of data stream

THEN count count correct CHECKSUM

ELSE IF data stream AND checksum

match with the message

THEN move X to the right

measure X to the right in 15mm

AND move Y up

measure Y up in 15mm

END