1. Three ASCII characters are believed to have been encrypted by the same 8-bit RC4 stream producing the cipher-text bytes:

   C1 = 1 0 0 0 0 0 1 1

   C2 = 1 0 0 1   1 0 1 1

   C3 = 1 0 0 0 1 0 1 0

   If they are all assumed to be decimal digits 0 to 9 or a space as listed in table 1, what are the three digits and what is the 8-bit RC4 stream?

- Among C1 C2 n C3 only C2 has a 1 at 4th bit so C2 must be the space.
- Looking at the ANCII table Space would be 0 0 1 0 0 0 0 0
- C2 ⊕ Space = 1011 1011 =Key (RC4 Key stream)
- C1 ⊕ Key = 0 0 1 1 1 0 0 0 (8)
- C3 ⊕ Key= 0 0 1 1 0 0 0 1 (1)
- So the three digits are 8 Space and 1. The 8-bit RC4 stream is 1011 1011.